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WARTIME AGRICULTURAL SURPLUSES OF THE DANUBE BASIN . . .

By Frederick Strauss*

The present war has tended to reduce the food supplies of continental Europe for two reasons: (1) domestic production in both belligerent and neutral countries has been adversely affected by shortages of fertilizers, labor, and farm machinery, by transportation difficulties, and by actual devastation; and (2) supplies from overseas have been sharply curtailed by the British blockade. Under these conditions the Danube Basin is of special significance, since it is one of the chief potential sources of supply for farm products sorely needed by Greater Germany, Italy, the conquered countries, and the still neutral countries of Europe. The objective of this study, therefore, is to determine the potentialities of the four Danubian countries as sources of supply for a blockaded Europe during the current war.

THE PLACE OF THE DANUBE BASIN IN THE EUROPEAN ECONOMY

The countries of the lower Danube Basin - Rumania, Hungary, Yugoslavia, and Bulgaria - have long been the most important European producers of staple farm surpluses. Since 1933 National Socialist Germany has been exerting great effort to bring about an expansion in the farm output of the Danubian countries and to establish itself as the dominating factor in determining the distribution of their agricultural surpluses.

The importance of the Danube Basin as a potential source of supply for farm products has been greatly enhanced by the war. The British blockade of Norway, the Netherlands, Belgium, France, Italy, and North Africa has further increased the demand for the Danubian foodstuffs and feedstuffs. The maintenance of livestock production and the assurance of adequate food supplies generally in the countries under German domination depend to a considerable extent on the volume of food and feedstuff supplies forthcoming from the Danubian countries during the war.

Italy and Switzerland also are increasingly attempting to draw upon the agricultural resources of the Danube Basin. Efforts by the United Kingdom to contract for large deliveries of farm products from Danubian areas were terminated with the entry of Italy into the war. Exports formerly sent to the British market will now be available for shipment to the countries under German and Italian domination, as far as current surpluses allow.

* Agricultural Economist. This article prepared while on temporary detail to the Office of Foreign Agricultural Relations.

It is obvious that the Danube Basin must remain, for the present at least, the chief potential foreign source of supply for the farm products needed by Greater Germany and by the conquered and the still neutral European countries. The crucial question is the extent to which the Danube Basin will be able to meet the sharply increased demand for such products. For the immediate future, this ability will be determined largely by current crop conditions, the effects of war on the acreage planted to various crops, by the efficiency of transportation facilities, and by changes in domestic consumption brought about by the present war.

An appraisal of potential exports during a long war must take into consideration a number of other important factors, outstanding among them the question of whether or not the countries of the Danube Basin can adapt their farm practices to specific wartime demands. The answer to that question involves a consideration of the structure of the Danubian farm economies, the adaptability of the farm populations to changed conditions, and the possible effects of the war on agricultural practices. Since these factors vary widely among the four countries of the Danube Basin, the problem has been approached by treating each of the countries individually.

The question of export potentialities of the individual Danubian countries in a war of long duration is discussed separately for each country. At this point, therefore, the reader will be given only a composite picture of the problems involved in the question of export potentialities of the Danube Basin as a whole, and of the relation between the magnitude of total potential Danubian surpluses and the total import needs of a blockaded deficit Europe.

ROLE OF THE DANUBE BASIN BEFORE THE WAR

The European countries now blockaded by the British were far from self-sufficient in essential farm products before the outbreak of war. To indicate the situation only with respect to such strategic products as bread grains and feedstuffs, blockaded deficit Europe imported about 14 percent of its apparent bread grain needs and over 20 percent of its total feed-grain requirements. These summary figures hide the significant fact that in some of the countries the role of imports was still more important; for instance, the countries now under complete German domination imported over 50 percent of their bread-grain and nearly 50 percent of their feed-grain requirements.

Moreover, the relatively favorable position of continental Europe with regard to most animal products was more apparent than real. Denmark and the Netherlands had been able to supply the bulk of the import needs of continental Europe for hog products, butter, and eggs. These exports, however, depended largely on the availability of corn, oilseeds, and oilcake from overseas countries. Of the total peacetime net imports of bread grains and feedstuffs (including feed grains, oilseeds, and oilcake) by continental deficit Europe, the Danube Basin could supply only a minor part.

As shown in table 1, the Danube Basin furnished only 37 percent of the continental European wheat imports, 17 percent of the rye imports, 19 percent of the corn imports, 3 percent of the oats imports, and 23 percent of the barley imports.

TABLE 1. Average pre-war net exports of the Danubian Basin and average pre-war net imports of blockaded continental Europe

COUNTRY	BREAD GRAINS			FEED GRAINS			OIL-SEEDS ¹	OIL-CAKE ¹	DRY BEANS	EGGS	BUTTER
	WHEAT & FLOUR	RYE	TOTAL	CORN	OATS	BARLEY					
	1,000 : 1,000	1,000 : 1,000	1,000 : 1,000	1,000 : 1,000	1,000 : 1,000	1,000 : 1,000	1,000 : 1,000	1,000 : 1,000	1,000 : 1,000	1,000 : 1,000	1,000 : 1,000
Danubian net exports: ²	tons	tons	tons	tons	tons	tons	tons	tons	tons	tons	tons
Rumania	850	77	927	591	11	285	887	66	28	47	11
Hungary	677	55	732	25	2	8	15	5	0	18	11
Yugoslavia	220	3	223	389	4	4	397	0	5	32	13
Bulgaria	142	6	148	58	1	9	68	0	11	19	18
Total Danube Basin	1,889	141	2,030	1,013	18	306	1,337	61	44	116	53
Continental European net imports: ³	:	:	:	:	:	:	:	:	:	:	:
Germany	746	130	876	1,242	122	252	1,616	684	1,267	29	88
Austria	130	126	256	371	29	53	453	33	6	2	6
Czechoslovakia	118	59	177	93	25	49	19	88	77	4	9
Total Greater Germany	994	315	1,309	1,706	126	256	2,088	805	1,350	35	103
Denmark	263	176	439	402	28	69	361	99	827	0	95
Norway	239	146	385	153	2	18	173	6	44	7	1
Belgium	1,132	134	1,266	866	46	460	1,372	66	176	8	11
Netherlands	675	19	694	1,012	18	255	1,285	94	551	3	80
Total German-dominated countries	2,309	475	2,784	2,433	94	664	3,191	265	1,598	18	165
France ⁴	149	1	150	770	46	195	1,011	451	662	25	13
Italy	608	15	623	166	87	52	305	77	44	36	5
Switzerland ⁵	507	20	527	107	216	145	468	28	0	2	15
Greece ⁵	507	0	507	62	2	12	76	11	0	20	1
Total imports	5,074	826	5,900	5,244	571	1,324	7,139	1,615	3,654	136	28
Danube Basin exports as percentage of	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Greater Germany's imports	190.0	29.7	155.0	59.4	14.0	119.8	64.0	7.5	328.1	51.6	5.1
Percentage of total deficit European imports	37.2	17.1	34.4	19.3	3.1	23.1	18.7	3.7	85.4	-	-
Net imports and net exports of oilseeds and oilcake are averages for the 5 years 1933-1937. Oilseeds are in terms of oil equivalent											

¹ Net imports and net exports of oilseeds and oilcake are averages for the 5 years 1933-1937. Oilseeds are in terms of oil equivalent.

² 1935-1939 average for bread and feed grains, 1935-1938 average for dry beans, butter, and eggs.

³ Net imports (-) are averages for the 4 years 1935-1938.

⁴ For purely technical reasons France is not classified as a German-dominated region.

⁵ Although not subject to the British blockade, Greece and Switzerland are regular purchasers of Danubian surpluses.

Compiled from official sources.

To the imports of oilcake necessary for the maintenance of the European livestock industry, the Danubian countries contributed little more than 1 percent. With respect to oilseed imports - the most important raw material for edible fats in most of these countries - less than 4 percent was derived from the Danube Basin. Most of these products came from countries to which continental Europe has no access under present blockade conditions.

Even if Greater Germany had succeeded in monopolizing Danubian surpluses before the war, they still would have met fully the German peacetime import needs only for bread grains and dry beans. During 1935-1939, for example, total Danubian exports fell short of German import needs by 36 percent for feed grains, 95 percent for butter, 48 percent for eggs, 92 percent for oilseeds, and 97 percent for oilcake. In spite of all efforts Germany actually obtained only 27 percent of the Danubian wheat surpluses and 47 percent of the corn exports during that period.

ROLE OF THE DANUBE BASIN DURING THE WAR

Germany now virtually dominates Rumania and Hungary, the most important Danubian surplus producers, and it is safe to anticipate that at best only a small part of the Yugoslavian and Bulgarian surpluses will find its way to other former customers, except Italy.

The relative importance of the Danubian farm surpluses during this war, for the Axis as well as for total continental European needs, will be determined by two sets of factors: (1) changed import requirements of the deficit countries as a result of war rationing and specific war influences on their domestic farm production; and (2) expansion potentialities of Danubian farm surpluses within the next few years.

EUROPEAN NEEDS

It must be assumed that Germany and Italy will do everything possible to maintain their productive capacity of war instruments and the striking power of their armies. Therefore, those countries will endeavor to maintain at least the food rations that have been in force since the outbreak of the war. On the basis of the rations now prevailing in Germany, and considering the needs of the army and the occupational shifts resulting from the war, the wartime needs for most of the products that can be obtained from the Danube Basin are well above peacetime levels. The minimum wartime German bread grain requirements, for instance, exceed peacetime needs by roughly 20 percent. These additional needs alone correspond approximately to the total average Danubian bread grain exports for 1935-1939.

The effects of the war on domestic farm production in most continental European deficit countries are no less important. Intensive farming methods, built on the application of fertilizers and intensive labor, prevail in virtually all of those countries. Germany in particular has since 1933 pursued a policy of increasing yields per acre by exactly such methods of intensification, accompanied by increased mechanization. Lack of some essential fertilizers, especially phosphates, a varying degree

of labor shortage, reduced numbers of draft animals, impossibility of further mechanization, and shortages of fuel, binder twine, and other essentials, necessarily tend to curtail farm production in continental Europe. Moreover, since by far the greater part of the formerly imported feed concentrates will be unobtainable as long as the British blockade remains effective, meat and dairy production will be reduced in the highly important livestock economies. In general, domestic production in all of the continental European deficit countries cannot be maintained during the war, and will decrease continually as the war is prolonged. On the other hand, the total requirements for bread grains and the import needs for feed grains and feed concentrates are greater than before the war, at least in the belligerent countries.

DANUBIAN SURPLUSES

The 1940 Danubian surpluses were sharply diminished by adverse weather conditions. The unusually severe winter of 1939-1940 affected most crops, greatly reducing yields. In addition, the late spring and extensive floods retarded and curtailed spring sowings; and large-scale mobilization, particularly in Rumania, led to a sizeable reduction of the winter grain acreage in most Danubian countries. To these handicaps must be added the effect of the territorial changes in Rumania. Bessarabia, now ceded to the Soviet Union, produced normally one-fifth of the Rumanian wheat and corn crops, and three-fourths of the oilseeds. The wheat loss this year will be even more serious, since the arid region of Bessarabia enjoyed favorable crop conditions, whereas crops in the rest of Rumania were short.

Unless the Danubian countries are deprived, by pressure, of part of their own urgent requirements, the total Danubian exports of wheat will hardly exceed 10 million bushels, and those of corn 25 million bushels. This compares with pre-war imports by deficit Europe of 170 million bushels of wheat and 190 million bushels of corn. The 1940-41 Danubian wheat exports will thus amount to only one-sixth, and those of corn to two-thirds, of the 1935-1939 exports. They will meet only 30 percent of the pre-war European and 40 percent of the Greater German wheat imports, and only 6 percent of the European and 13 percent of the German pre-war corn imports.

On the basis of detailed analysis of the social and economic structure of the Danubian countries, it is believed that there is little likelihood of an expansion in farm production in the next few years. In some of the countries, peculiarities of peasants' attitudes, racial habits, and a high degree of illiteracy make it improbable that educational methods could accomplish production expansion in a few years, since traditions and customs are likely to interfere with adoption of new modes of living and progressive farming methods. The uneconomic size of the farm holdings in Rumania, Bulgaria, and Yugoslavia remains another serious difficulty hampering rapid improvements in farm conditions. Only a slow process of intensifying the agriculture of these regions holds out hope for future expansion of production. Even then it is doubtful whether such a process can be carried out without accompanying improvements in the standard of living of the peasants, a factor that would reduce potential export surpluses. Other factors that would seem to prevent significant increases of exportable surpluses within a short time are discussed in the report.

RUMANIA

Rumanian economists claim that even before the recent territorial revisions agricultural production in that country met only 78 percent of the country's actual food needs, and that exports - constituting 15 to 20 percent of the production - do not represent actual surpluses, but rather food that should be consumed domestically. In order to furnish sufficient food for the population and at the same time maintain agricultural exports at existing levels, it is believed that an increase in production of nearly 30 percent would be required.¹

In times like the present, when strong economic and political pressure is being placed on Rumania to provide increased exports of virtually all farm products, these opinions might appear to be of merely theoretical interest; yet the bulk of Rumanian farm exports undoubtedly has been made possible largely as a result and at the cost of a generally low level of domestic food consumption.

The retarded development of the Rumanian economy, especially of the farm economy, complicates the problem of potential farm exports during the current war. Moreover, in a time of emergency, when a substantial part of the working population is drafted for military service or shifted into occupations typical of a war economy, the ensuing rise in food consumption is bound to curtail farm exports. Indications are, however, that German authorities are intent on bringing about a demobilization of the Rumanian army; and a rigid system of food rationing is under consideration.

A number of factors in the structure and operation of Rumanian farm economy, as well as existing natural conditions, limit the possibilities of expansion in farm production and make changes in the production pattern unusually difficult, at least during the next 2 or 3 years. Since the primary purpose of this study is to determine the extent to which agricultural surpluses may be forthcoming from Rumania during the next few years, only those factors pertinent in ascertaining this possibility will be considered.

THE AGRICULTURAL STRUCTURE OF RUMANIA²

In 1939 the population of Rumania was slightly in excess of 20 million. The predominantly agricultural character of the economy is shown by the fact that in 1939 approximately 80 percent of the gainfully occupied population was engaged in agriculture and forestry and about 9 percent in mining, industry, and transportation. In spite of the territorial gains resulting from the World War, the occupational distribution did not change noticeably throughout the post-war period.

CHANGES IN GRAIN PRODUCTION

The "Old Kingdom" of Rumania, as constituted before the World War, was especially important as a producer and exporter of grain. During the 5 years preceding

¹ According to Dr. A. Cherdivareneu before the Polytechnic Society of Bucharest, in March 1939.

² Since grains constitute the basis of Rumanian farm economy, this section deals largely with problems of grain production and exports.

the World War 72.1 percent of the country's wheat production, nearly 78 percent of the rye, about 79 percent of the barley, 41 percent of the oats, and 39 percent of the corn were exported.³ The acquisition of the former Austrian province of Bukovina, the former Hungarian provinces now included in Transylvania, Russian Bessarabia (occupied by Rumania in 1920), and Dobrogea, enlarged the country to more than twice the size of the old Kingdom.⁴ The area that could be seeded to field crops was likewise increased to more than twice the pre-World-War acreage.

The increase in area, however, did not result in a corresponding rise in grain production after the World War (see table 2). Characteristic of the pre-World-War situation was the relative stability in the total acreage sown to various grain crops. However, a comparison of production before and after the World War shows that during the post-war period important shifts were taking place almost continuously. During 1928-1932, for example, the production of wheat and rye declined to two-thirds of the pre-World-War level, whereas that of barley surpassed the 1909-1913 production by more than a third, and that of corn and oats by about 4 percent.

Since 1928-1932 grain crop distribution has again changed noticeably; production of wheat and rye has tended to regain its losses, though still more than 10 and 15 percent, respectively below that of 1909-1913. Corn production, on the other hand, is now about 10 percent above the pre-World-War level. The production of barley, which increased noticeably during the first decade after the World War, is now nearly 30 percent below that of 1909-1913; the output of oats has reversed its tendency and is now nearly 40 percent below the 1909-1913 level.

CHANGES IN EXPORTABLE GRAIN SURPLUSES

The development of Rumanian exportable grain surpluses is of special significance. During 1909-1913 the areas comparable with Greater Rumania (including annexations following the World War) exported 44.9 percent of the gross production of wheat, 41.8 percent of the rye, 49.5 percent of the barley, 28.9 percent of the oats, and 33.2 percent of the corn.

A fundamental change in Rumania's grain export position is evidenced when the ratio of exports to production in 1909-1913 is compared with the present ratio. Only 20 percent of the wheat was exported during 1935-1939, as compared with 45 percent in 1909-1913. The decrease in this ratio is even sharper for the other grains; for example, the corn export ratio fell from 33 percent during 1909-1913 to 10 percent in 1935-1939. Only 2 percent of the 1935-1939 production of oats was exported, as compared with 29 percent during 1909-1913.

The 1935-1939 level of exports was without exception still far below that of 1909-1913, despite favorable export conditions and unusually good crops in 1938 and

³ These percentages refer to net production (i.e., total production less seed, bud, and waste); the ratio of exports to gross production is given in table 2.

⁴ Recent territorial losses are disregarded throughout the sections dealing with the structure and pattern of agriculture; they are, however, covered on pages 730-731.

1939. Only 40 percent of the 1909-1913 volume of wheat, 37 percent of barley, 33 percent of rye and corn, and 4 percent of oats exports was available during 1935-1939.

TABLE 2.—Rumanian grain production and net exports, averages 1909-1913, 1928-1932, 1933-1937, and 1935-1939

PERIOD	WHEAT		RYE		BARLEY		OATS		CORN	
	PRODUC-	NET	PRODUC-	NET	PRODUC-	NET	PRODUC-	NET	PRODUC-	NET
	TION	EXPORTS	TION	EXPORTS	TION	EXPORTS	TION	EXPORTS	TION	EXPORTS
	: 1,000	: 1,000	: 1,000	: 1,000	: 1,000	: 1,000	: 1,000	: 1,000	: 1,000	: 1,000
	: bushels	: bushels	: bushels	: bushels	: bushels	: bushels	: bushels	: bushels	: bushels	: bushels
Old Kingdom:	:	:	:	:	:	:	:	:	:	:
1909-1913	93,794	54,434	5,066	2,967	27,133	16,741	30,019	10,421	102,819	38,729
Greater Rumania:	:	:	:	:	:	:	:	:	:	:
1909-1913	158,670	71,272	20,027	8,379	65,284	32,772	63,794	18,426	195,555	64,906
1928-1932	107,382	11,363	13,503	1,457	87,307	42,164	66,282	3,062	202,678	37,720
1933-1937	111,788	13,743	14,839	2,355	57,030	18,130	45,792	1,034	197,970	27,806
1935-1939	140,816	28,340	17,136	2,743	46,862	11,933	40,009	706	211,891	21,082
Index:	:	:	:	:	:	:	:	:	:	:
1909-1913	100	100	100	100	100	100	100	100	100	100
1928-1932	67.7	15.9	66.6	17.4	133.7	130.4	103.9	16.6	104.1	58.1
1933-1937	70.5	19.3	73.2	28.1	87.4	56.1	71.8	5.6	101.7	42.8
1935-1939	88.7	39.8	84.5	32.7	71.8	36.9	62.7	3.8	108.8	32.5
Net exports	:	:	:	:	:	:	:	:	:	:
as percent-	:	:	:	:	:	:	:	:	:	:
ages of	:	Percent	:	Percent	:	Percent	:	Percent	:	Percent
production:	:	:	:	:	:	:	:	:	:	:
1909-1913	:	44.9	:	41.8	:	49.5	:	28.9	:	33.2
1928-1932	:	10.6	:	10.8	:	48.3	:	4.6	:	18.6
1933-1937	:	12.3	:	15.9	:	31.5	:	2.2	:	14.0
1935-1939	:	20.1	:	16.0	:	25.5	:	1.8	:	9.9

Compiled from official sources.

EFFECT OF LAND REFORM ON FARM EFFICIENCY

The reasons for the decrease in grain production, particularly of exportable surpluses, need not be traced in detail. However, in order to determine the volume of exports that may be expected from Rumania during the next few years, it is necessary to ascertain whether the post-war decrease was brought about by random factors easily remedied in time of emergency or by more fundamental structural factors that do not permit of reversal within a relatively short time.

The distribution of land in Rumania, where the majority of the farm population was not freed from serfdom until 1864, is important in determining farm practices and thus crop yields and production. Before the World War, land distribution was characterized by holdings of two extremes in size: the small, uneconomical peasant farms averaging not quite 10 acres; and the large estates, averaging 3,500 acres. About 40 percent of the crop acreage was composed of holdings of less than 25 acres, where-

as estates of more than 1,250 acres accounted for 38 percent. Of the farm owners, 95.4 percent, or about a million peasants, owned only slightly more land than the 0.2 percent represented by 2,000 estate owners. Medium-sized farms, usually the most efficient under European farming conditions, were virtually nonexistent except in Transylvania, which at that time was part of the Austro-Hungarian empire.

Another characteristic of pre-war agriculture was the relatively small number of landless farm laborers (only 200,000 in 1913) despite the prevalence of large estates. This is explained largely by the history of the inequality of Rumanian land division. After the emancipation of the serfs, the size of the peasant holdings was barely sufficient to provide them with a meager subsistence, especially since the soil of the holdings was usually of poor quality. Consequently, a considerable portion of many large estates was rented in small lots to peasants and croppers. The estate owners depended on the peasants not only as farm helpers, but also for the use of their draft animals and, to a lesser degree, their primitive farm implements. Consequently the number of landless workers was relatively small.

The large estates (*latifundia*) of Greater Rumania were for the most part operated efficiently and upon much the same principles as in Germany or France. Managers, frequently imported from neighboring countries, were usually well trained in advanced agricultural methods. The seed beds were carefully prepared in season, rational systems of crop rotation were employed, improved varieties of seed were used, the poorer soils were fertilized, and modern machinery was extensively employed, although at the time of the World War harvesting with a sickle was still common. In regions of uncertain rainfall up-to-date methods of moisture conservation were used.

The size and topography of the peasants' fields, however, permitted the use of only the simplest type of machinery and most primitive methods of cultivation, often dating back 2,000 years to the time when the country was settled by farmers emigrating from ancient Rome.⁵ It is not surprising, therefore, that crop yields on large estates were considerably higher than on peasant farms.

TABLE 3.—Grain crop yields on large estates and peasant holdings in the old Kingdom of Rumania, average 1909-1913

CROP	LARGE ESTATES	SMALL PEASANT HOLDINGS	YIELD ON LARGE ESTATES AS PERCENTAGE OF YIELD OF PEASANT HOLDINGS
	<i>Bushels</i>	<i>Bushels</i>	<i>Per Cent</i>
Wheat	20.1	17.7	113.5
Rye	18.2	14.2	118.2
Barley	21.4	18.0	118.8
Oats	28.8	22.9	125.7
Corn	23.2	19.0	122.1
	:	:	:

Compiled from official sources.

⁵ Michael, Louis G., *Agricultural Survey of Europe; The Danube Basin. Part 2: Rumania, Bulgaria and Yugoslavia*, Tech. Bul. No. 126, U. S. Dept. Agr., pp. 18-19.

Toward the end of the World War, when the Central Powers had occupied part of Rumania, the peasant army made continuation of the war dependent on the promise of a radical land reform, which was effected by a decree of December 16, 1918. It was the original intention of the government to hold the expropriated estates under public control and to operate the land under cooperative management. When it became apparent that this plan could not be realized, the land was subdivided into small plots. The result of this reform, affecting about 15 million acres of a total agricultural area of 42 million, was that 35 percent of the acreage formerly operated under relatively efficient methods came into the possession of peasants who were not equipped to maintain the former level of efficiency.

The backwardness and lack of ambition of the Rumanian peasant may be explained by a number of factors. The peasants are descendants of serfs, who were exploited by the Turks until the middle of the nineteenth century and dominated by local landlords until their liberation. Even after their emancipation, and until the outbreak of the World War, the peasants were entirely dependent on the large estates. These conditions were not conducive to the development of initiative or efficiency. Moreover, the percentage of illiteracy among the peasants is high. It is also significant from the point of view of efficiency and productiveness that a good deal of the farm work is done by women and children, and that there are 108 days in the year - chiefly church and national holidays - during which the peasant feels that he is obligated to do no work.⁶ Adding the winter days and other periods of adverse weather conditions, there remain only about 80 days for actual field work.

It is improbable that such a situation can be remedied in a few years. Only large-scale and slowly-working educational measures can be depended on to change the peasant's reluctance to adopt ways of living and farming methods that differ from those handed down from generation to generation.

Since the World War little effort has been made to raise the social and intellectual standards of the peasants.⁷ Existing difficulties might have been overcome eventually if the original plans for cooperative management had been realized. The land reform failed to remove the chief obstacle in the way of efficient farming - the uneconomic size of peasant holdings. The peasant family received an average of only 6 to 7 acres.

The apparent advantages of the subdivision of the large estates could not be maintained.⁸ Since farms in Rumania are divided in equal parts among the heirs, the small peasant holdings had to be parcelled into still smaller and smaller units as population increased. A further impediment to efficiency lies in the fact that the holdings of an individual peasant consist of lots scattered in different locations,

⁶ *Ibid.*, p. 19

⁷ Pr Ibrdević, Stojan, *World Without End; the Saga of Southeastern Europe*, New York 1939, p. 235

⁸ According to Peter F. Drucker (in "Can Germany Win the Balkans," *Harpers Magazine*, Jan. 1939, p. 152), much of the initial improvement in the peasants' situation has been lost. The small farmers could not obtain credit and were obliged to seek financial assistance from their former landlords, to whom they gradually pledged all their property. As a result, not more than a twentieth of the farmer owners installed by the land reform are still in real control of their land.

which cannot be operated as a single farm. Moreover, throughout most of the post-war period emigration was rigidly restricted, and opportunities for nonagricultural employment were - and still are - extremely limited.

Under these circumstances it is not surprising that the land reform adversely affected both the quantity and quality of Rumanian crops and farm exports. A period of low production, extremely small export surpluses, and sharply decreased farm income persisted a decade after the inauguration of the reform measures. The transfer to peasant ownership of 15 million acres previously efficiently operated by the estates would have alone caused a considerable decrease in production and yield. Before the land reform 51 percent of the total wheat acreage, 34 percent of the oats, 25 percent of the barley, 12 percent of the rye, and 13 percent of the corn were grown on the estates.

The retrogression of farming methods and the resulting decrease in the production of some crops and in all exports have, therefore, been due to factors that cannot be readily altered. Of these factors only the most important have been mentioned. Many others, institutional as well as natural, are likely to prevent rapid expansion of production and exports, even though strong pressure may be exercised to bring about such expansion. An educational program followed over a long period of years would no doubt bring about a gradual improvement in farming methods; as a result crop yields and livestock production might be increased to the point of regaining the pre-World-War level of cereal exports and expanding the exports of livestock and its products. Such an improvement, however, would require complete revamping of the farm economy, necessitating an extensive educational program, consolidation of the scattered farm lots, and vast expenditures for fertilizers, farm machinery, and transportation facilities - a program not possible of completion within a few years.

EFFECTS OF SOIL AND CLIMATE ON GRAIN PRODUCTION

On the whole, physical conditions present no serious obstacle to expansion of Rumanian agriculture - especially to an increase in grain production - provided farming methods are adjusted to existing soil and climatic conditions. Although the soils of the hilly sections are somewhat deficient in humus and nutrients, since humidity and rainfall wash away the soluble components, those of the plains are unusually fertile, rich in such plant nutrients as potash and nitrogen (though frequently deficient in phosphorus).

The plains, exposed to extremes of rainfall and temperature, are actually semiarid steppes, whose productive properties depend entirely on sufficient and uniform moisture. Eastern Rumania, Dobrogea, and southern Bessarabia are the driest regions of the entire Danube Basin. Here the spring and fall seasons are short and the summers long and hot. Droughts are frequent; rainfall occurs largely in the form of a few heavy downpours. As a rule satisfactory crop yields are possible only when moisture-conserving methods are constantly applied. Managers of the large estates knew how to overcome this handicap to a considerable extent; the peasants, however, depend on natural rainfall, and as a result crop failures occur whenever unfavorable weather conditions prevail.

INVESTMENT IN AGRICULTURAL MACHINERY

The typical Rumanian peasant farm is equipped with only the crudest and most inefficient farm implements. The average investment per acre in farm tools is only half of that in Bulgaria, a third of that in former Poland, and one-fifteenth of the investment in Germany.

TABLE 4.—*Relation of investment in agricultural implements to wheat yields*

COUNTRY	INVESTMENT IN AGRICULTURAL IMPLEMENTS PER ACRE	WHEAT YIELD PER ACRE	INDEX	
			INVESTMENT PER ACRE	WHEAT YIELD PER ACRE
	<i>Lei</i>	<i>Bushels</i>	<i>Index</i>	<i>Index</i>
Rumania	405	9.5	100	100
Bulgaria	809	14.5	200	154
Poland	1,214	15.9	300	167
Germany	6,070	22.8	1,500	241
Switzerland	17,402	24.8	4,300	262

Based on figures compiled by Dr. A. Cherdivarencu (see footnote 1).

Additional farm machinery is necessary if production is to be maintained at even the present level. The Institute for Agricultural Research at Bucharest reports that the total value of Rumanian farm equipment is only about 14 billion lei (about 98 million dollars). In many cases the equipment is not only antiquated, but beyond repair. Many peasants still use wooden plows, and often one plow must be used by five farms. Replacement of the completely obsolete equipment, with provision for the most urgent additions, would require an expenditure amounting to more than the total value of the present machinery.

Obviously, such a situation cannot be remedied in a short time. German authorities, who have a special interest in improving the situation, have pointed out that there are numerous difficulties. Because of topographic conditions, only specific types of machinery can be used. High duties and other levies, as well as inland and ocean freight rates (the latter usually representing from 30 to 40 percent of the value of the machinery in the manufacturer's price) constitute a severe handicap. The credit problem presents another difficulty; the peasant cannot pay cash for his equipment, and the seller, who retains no title in the property sold and no right to repossession in case of default, assumes a high risk in such sales. The National Cooperative Institute may act as an intermediary, but may vouch only for members of cooperatives.⁹

The Ministry of Agriculture recently recommended the expenditure within the next 5 years of 1.3 billion lei (about 9 million dollars) for farm machinery, to

⁹ *Südost Echo*, "Rumäniens Bedarf an Landmaschinen," (Rumania's farm machinery needs) Jan. 5, 1940.

be provided by the National Cooperative Institute, largely through imports from Germany. Germany, however, will probably not be able to export much farm machinery for the duration of the war; moreover, in 5 years only a small part of actual requirements would be supplied.¹⁰ The plan also envisaged the abolition, at least in part, of duties and taxes on imported machinery.

The long-run possibilities for improving farm methods and expanding production will not here be evaluated. As for the immediate future, however, and even for the next half-decade, it may be safely stated that no appreciable change may be expected.

THE PATTERN OF ROMANIAN AGRICULTURAL PRODUCTION

Grain crops constitute the basis of Rumanian farm economy; partly because of natural factors but also because of the widespread indifference of the peasants toward the introduction of new crops and farming systems. Table 5 shows the prevailing pattern of Rumanian agricultural production.

LAND UTILIZATION IN GREATER ROMANIA

In the year 1938, of a total area of about 74 million acres approximately 33 million, or 45.6 percent, consisted of arable land; 11 million, or 14.8 percent, of permanent meadows and pastures; and 1.6 million, or 2.1 percent, of tree and bush crops. Forests constitute 21.5 percent of the total, and the remaining 16 percent is unproductive. The importance of grain crops is shown by the fact that they account for 83.8 percent of the arable land. Corn is by far the most important single crop, grown on 37.2 percent of all arable land, followed by wheat (28.4 percent) and barley (9.5 percent). The remaining 14.2 percent is divided almost equally among food crops, fiber plants, oilseeds, and tobacco.

The production pattern of Rumania has shown only minor changes during the past 10 or 12 years; however, this is not necessarily proof that strong German pressure may not succeed in increasing agricultural production in some fields. It should not be overlooked, however, that such pressure has been exerted more or less continuously since 1934. Moreover, the depression of the 1930's should have stimulated definite shifts in acreage but it resulted only in governmental recommendations for such shifts. Present indications are that official propaganda or pressure alone will not be able to induce the peasants to reorganize their crop system within the course of the next few years.

Since the late 1920's the acreage planted to grain crops has shown little change (see table 5). During the 5-year period 1935-1939 the level of grain acreage was 3.5 percent above that of 1928-1932. Since 1936 a downward tendency has prevailed; however, this tendency is too slight to conclude that it occurred as a result of

¹⁰ According to the plan drawn up by Professor Jonescu-Sisest1 (Rumanian Minister of Agriculture and Domains), published in *Argus*, Mar. 21, 1940.

the government's recommendation for a reduction in grain acreage in favor of legumes, fibers, oilseeds, and fodder crops to meet changes in the export demand. On the contrary, there is reason to believe that the decrease in total grain acreage is due largely to random factors.

TABLE 5. *Land utilization in Greater Rumania, 1938*¹

LAND USE	AREA	PERCENTAGE OF TOTAL
	1,000 acres	Percent
Total area of Rumania	72,906	100.0
Arable land	33,223	45.6
Permanent meadow and pasture	10,806	14.8
Tree and bush crops	1,564	2.1
Woods and forests	15,656	21.5
Unproductive	11,658	16.0
Grain crops:		Percent arable land
Corn	12,348	37.2
Winter wheat	8,797	26.5
Spring wheat	638	1.9
Spring barley	2,958	8.9
Winter barley	200	0.6
Oats	1,609	4.8
Rye	1,191	3.6
Other grains	111	0.3
Total	27,853	83.8
Food crops:		
Beans	208	0.6
Peas	121	0.4
Lentils	54	0.2
Other legumes	10	0.03
Potatoes	476	1.4
Onions	54	0.2
Cabbage	67	0.2
Melons and watermelons	101	0.3
Vegetable gardens	99	0.3
Total	1,191	3.6
Industrial crops:		
Hemp	126	0.4
Flax	12	0.04
Cotton	12	0.04
Sunflower seed	497	1.5
Rapeseed	205	0.6
Poppies	5	0.02
Soybeans	156	0.4
Tobacco	42	0.1
Sugar beets	119	0.4
Total	1,201	3.6
Fodder crops:		
Alfalfa	368	—
Clover	469	—
Mohar	413	—
Fodder beets	114	—
Total	1,982	—
Tree and bush crops:		
Vines	912	—
Orchards of plum trees	371	—
Other orchards	279	—
Total	1,564	—

¹ Minor crops are contained in the subtotals, but are not given individually.

Based on figures in the *International Yearbook of Agricultural Statistics, 1938-39*.

It is especially noteworthy that on the whole the acreage changes in the various grains conflict with governmental recommendations. The government demanded a reduction in wheat and corn acreage and an increase in barley and oats; but between 1928-1932 and 1935-1939 the wheat acreage increased nearly 20 percent and the corn


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acreage 10 percent, while oats and barley decreased 30 and 25 percent, respectively. Since 1936 the acreage under oats has been reduced 26.7 percent and that under barley 32 percent, while the wheat acreage increased 19 percent. Only the 6-percent decrease in corn acreage was in line with official recommendations.

In the food materials of all countries under German influence there is at present a marked deficiency in protein of both animal and vegetable origin; consequently, leguminous plants have attained added importance because of their high protein content. Thus far, however, Rumanian farmers have made no effort to expand the acreage of such plants as beans, peas, and lentils - since 1936, in fact, a decrease of 10 percent has occurred. Also, the acreage planted to textile fibers, the products of which are in great demand domestically and in all German-dominated countries, has shown no increase since 1934.

TABLE 6. Crop acreages in Greater Rumania, averages 1928-1932, 1933-1937, and 1935-1939; annual 1933 to 1939

| CROP          | AVERAGES  |           |           | 1933   | 1934   | 1935   | 1936   | 1937   | 1938   | 1939   |
|---------------|-----------|-----------|-----------|--------|--------|--------|--------|--------|--------|--------|
|               | 1928-1932 | 1933-1937 | 1935-1939 |        |        |        |        |        |        |        |
|               | 1,000     | 1,000     | 1,000     | 1,000  | 1,000  | 1,000  | 1,000  | 1,000  | 1,000  | 1,000  |
|               | acres     | acres     | acres     | acres  | acres  | acres  | acres  | acres  | acres  | acres  |
| Cereals       | :         | :         | :         | :      | :      | :      | :      | :      | :      | :      |
| Corn          | 11 470    | 12 563    | 12 611    | 11,928 | 12,368 | 12,772 | 12,999 | 12,749 | 12,348 | 12,187 |
| Wheat         | 7 579     | 8 212     | 9,053     | 7,700  | 7,609  | 8,496  | 8,480  | 8,777  | 9,435  | 10,079 |
| Rye           | 867       | 991       | 1,076     | 958    | 911    | 960    | 1,041  | 1,083  | 1,191  | 1,107  |
| Barley        | 4,687     | 4,123     | 3,533     | 4,465  | 4,331  | 4,079  | 3,980  | 3,739  | 3,158  | 2,708  |
| Oats          | 2,511     | 1,998     | 1,792     | 2,050  | 2,044  | 1,970  | 1,966  | 1,939  | 1,609  | 1,455  |
| Total         | 27,114    | 27,887    | 28,065    | 27,121 | 27,263 | 28,277 | 28,486 | 28,287 | 27,741 | 27,536 |
| Beans         | 237       | 257       | 225       | 255    | 277    | 245    | 259    | 247    | 208    | -      |
| Peas          | -         | -         | 116       | 42     | 74     | (2)    | 128    | 109    | 121    | -      |
| Lentils       | -         | -         | 44        | 40     | 37     | (2)    | 40     | 49     | 54     | -      |
| Hemp          | 101       | 119       | 122       | 118    | 114    | 114    | 124    | 126    | 126    | -      |
| Flax and seed | 52        | 63        | 60        | 47     | 64     | 77     | 72     | 54     | 37     | -      |
| Cotton        | -         | 3         | 5         | 5      | 2      | 2      | 2      | 5      | 12     | -      |
| Sunflowers    | -         | -         | 472       | 402    | 497    | 472    | 504    | 494    | 497    | -      |
| Rapeseed      | 153       | 195       | 219       | 96     | 143    | 314    | 227    | 195    | 205    | -      |
| Soybeans      | -         | 83        | 163       | -      | 4      | 50     | 119    | 241    | 156    | -      |
| Tobacco       | 59        | 35        | 50        | 25     | 25     | 44     | 44     | 35     | 42     | -      |
| Sugar beets   | 94        | 87        | 89        | 106    | 91     | 91     | 72     | 74     | 119    | -      |
| Potatoes      | 487       | 514       | 514       | 489    | 504    | 511    | 535    | 533    | 376    | -      |

<sup>1</sup> Average 1935-1936.

<sup>2</sup> Data not available.

Compiled from *International Yearbook of Agricultural Statistics*, International Institute of Agriculture, for 1936-37 to 1938-39 and official data in the Office of Foreign Agricultural Relations for other years

Germany has been bending every effort to stimulate increased production of oleaginous plants, particularly soybeans. A German-Rumanian company, "Soia," controlled largely by the German Dye Trust, was founded in 1934 for the purpose of

contracting with Rumanian peasants for the cultivation of soybeans previously unknown in southeastern Europe. After much experimentation to determine the most suitable soils and seed, it was found that Bessarabia offered the best prospects for soybean production. As a result 80 percent of the total Rumanian soybean acreage was located in Bessarabia - which has now been ceded to the Soviet Union. During the first few years the number of peasants with whom contracts (for 2.5 acres each) were concluded increased rapidly, reaching 74,000 in 1937. In 1938 only the most efficient farmers were allotted seed and given instructions, and the number of producers was cut in half. In 1939, however, the upward trend was resumed, and is expected to continue as long as Germany offers its present high prices for soybeans. The available supply of farm labor, draft animals, and tractors, however, as well as natural factors and prices of competitive crops, will partly determine the future level of production. No noticeable expansion has recently taken place in the acreage of other oil-bearing plants.

#### CROP YIELDS AND PRODUCTION

The outstanding characteristics of Rumanian agricultural production are the low level of and extreme variation in crop yields, resulting chiefly from backward farming methods and inability to provide for adequate moisture conservation. Application of manure is rare, and commercial fertilizers are practically never used in spite of the general deficiency of phosphorus in the soil. According to Rumanian officials,<sup>11</sup> the soils of even the best districts are in danger of becoming depleted unless the use of fertilizers is increased.

The primitive rotation system in Rumania results in low yields even for grains. The yield of corn in 1935-1939 was 28.2 percent, that of barley 24.6 percent, that of oats 20.9 percent below the 1909-1913 level, and even the wheat yield was 6.6 percent below 1909-1913. Adequate yields from crops now in greatest demand (such as fibers, legumes and oil-bearing plants) can be obtained only if the government makes available the right qualities of seed and instructs the peasants in more efficient methods. It is obvious that the prevalence of low yields during more than two decades cannot be remedied immediately except during years of unusually favorable weather, even if sufficient fertilizers, modern farm equipment, and high-quality seed could be supplied.

No less disturbing is the extreme variation in yields. During 1930-1939 the percentage deviation from the average yield was 23.3 percent for barley, 19.4 percent for wheat, 15.8 percent for rye, 14.7 percent for oats, and 9.9 percent for corn. This instability in yield explains, largely, the variability of Rumanian grain production, as well as the wide fluctuation in exports. Table 7 shows the yields of grain crops during the past two decades.

For a number of reasons corn is the Rumanian peasant's most important grain crop. First of all, corn is his chief food grain; it is estimated that only 3 million

<sup>11</sup> Lapadara, Aureliu. "A technical study on Rumanian cereals." *Correspondance Economique Roumaine*, No. 2, 1939, p. 4.



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people of a total of 20 million regularly consume wheat as a bread grain. Moreover, farm operations in production of corn may be performed largely by hand; and only 0.3 bushel of seed per acre is required as compared with 3.3 bushels for wheat, thus reducing production outlays. Because of the peasant's familiarity with corn and the suitability of the climate for that crop, fluctuations in production are smaller than those of other grains except in years of extremely adverse climatic conditions. During 1930-1939 the deviation from the average production was 10 percent, due almost entirely to variations in yield.

TABLE 7. *Yields per acre of Rumanian grain crops, averages 1909-1913, 1928-1932, 1933-1937, 1935-1939, 1930-1939; annual 1933 to 1939*

YEAR	CORN	WHEAT	RYE	BARLEY	OATS
	<i>Bushels</i>	<i>Bushels</i>	<i>Bushels</i>	<i>Bushels</i>	<i>Bushels</i>
Annual:	:	:	:	:	:
1933	15.0	15.5	18.3	19.3	27.1
1934	15.4	10.1	9.1	9.2	19.0
1935	16.6	11.4	13.3	10.4	20.8
1936	17.0	15.2	17.1	18.6	29.4
1937	14.7	15.7	16.4	11.3	18.2
1938	16.3	18.8	17.1	12.1	19.8
1939	19.5	16.2	15.3	13.8	23.1
Average:	:	:	:	:	:
1909-1913	23.4	16.7	16.1	18.3	28.2
1928-1932	17.7	10.5	10.0	18.6	26.7
1933-1937	15.7	13.6	15.0	13.8	22.9
1935-1939	16.8	15.6	15.9	13.8	22.3
1930-1939	17.1	14.4	15.2	14.6	23.1
Average deviation from :	:	:	:	:	:
1930-1939 mean yield :	1.7	2.8	2.4	3.4	3.4
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Percentage deviation :	9.9	19.4	15.8	23.3	14.7
	:	:	:	:	:

Compiled from official sources.

The variability of the annual wheat crop, on the other hand, is more than twice that of corn. During and immediately after the World War the wheat situation was affected by war influences, and later by the effects of the land reform. Before 1931 various governmental measures were undertaken to improve conditions, but with little success. In 1931 a wheat valorization program combined with a system of export premiums was initiated in the hope of raising the domestic price level. The system was modified in 1933 to one of government purchase of wheat when the domestic price fell below a fixed minimum. The new system maintained domestic prices at about twice the world market prices. Since 1935 a combination program has been followed of export premiums, minimum domestic prices, and government purchase.

Barley production is the most unstable of that of all Rumanian crops, the deviation from the average of 1930-1939 amounting to 23.3 percent, of which two-thirds

was due to variations in yield and one-third to variations in acreage. Production has been declining steadily; the average crop for 1935-1939 was only 46.9 million bushels, as compared with 57 million for 1933-1937 and 87.3 million during 1928-1932. Production of oats is also declining, but the annual crop fluctuations are not so sharp, being more nearly equal to those of wheat.

TABLE 8. *Production of Rumanian farm crops, averages 1928-1932, 1933-1937, 1935-1939; annual 1935 to 1939*

CROP	UNIT	AVERAGES		1935-1939	1935	1936	1937	1938	1939
		1928-1932	1933-1937						
		Thou- sands	Thou- sands	Thou- sands	Thou- sands	Thou- sands	Thou- sands	Thou- sands	Thou- sands
Corn	Bu.	202,500	187,970	211,891	211,767	220,932	187,071	201,459	238,227
Wheat	Bu.	107,382	111,788	140,816	96,439	128,717	138,158	177,155	163,811
Rye	Bu.	13,503	14,839	17,136	13,724	17,824	17,768	20,361	16,987
Barley	Bu.	87,307	57,030	46,662	42,430	74,031	42,127	38,222	37,498
Oats	Bu.	66,262	45,792	40,009	40,904	58,362	35,328	31,903	33,548
Beans	Bu.	2,903	2,530	-	2,712	2,454	1,580	1,716	-
Potatoes	Ton	69,702	69,592	-	74,295	71,356	70,768	61,441	-
Sugar beets	Ton	751	634	-	690	469	549	806	-
Hemp	Ton	24	29	-	25	32	30	33	-
Flax	Ton	4	10	-	10	13	10	7	-
Cotton	Bale	-	1,015	-	461	1,384	2,306	2,767	-
Sunflower seed	Ton	-	191	-	179	211	191	200	-
Rapeseed	Ton	36	36	-	13	41	78	54	-
Soybeans	Ton	-	-	-	-	-	-	-	-
Tobacco	Ton	18	11	-	14	16	11	14	-

Compiled from *International Yearbook of Agricultural Statistics* and official data in the Office of Foreign Agricultural Relations.

Of the remaining crops, only a few are of importance to this study. Production of legumes shows wide annual fluctuations, but without any evident tendency toward increase. Potatoes and sugar beets are grown for domestic consumption only. Production of fiber crops, particularly cotton, is entirely inadequate to meet domestic needs; the fivefold increase in production since 1935 still meets only 3 percent of Rumanian requirements.

Except in the case of soybeans, no increase has taken place in the production of oleaginous plants. Normally 75 percent of the sunflower seed, 70 percent of the hemp seed, 65 percent of the flaxseed, and about 50 percent of the rapeseed were consumed domestically before the recent territorial changes. At present, total production of oilseeds is insufficient to meet domestic needs.

Fruit production has suffered from backward methods of cultivation, handling, and processing. The number of plum trees, constituting more than 60 percent of all fruit-bearing trees, is placed at 49 million; but the average yield per tree is very low, amounting to only 17 pounds as compared with 85 pounds in Yugoslavia and in

California.¹² In addition, the fruit is of inferior quality, with the result that only 25 percent of the crop can be consumed as fresh fruit or as dried fruit or jam. The remaining 75 percent is used in the manufacture of plum brandy.

In 1937 the 8 million apple trees in Greater Rumania produced a crop of 660,000 short tons. In the same year 115,000 tons of pears, 408,000 tons of walnuts, and 34,000 tons of quinces were produced. Rumania exports little fruit, because of the generally low quality and the lack of a standardized product; according to official estimates only 1 percent of the total production was exported in 1937. There are long-time possibilities of improving both quality and quantity of the fruit crops and of exporting larger surpluses; these, however, cannot be realized within the next few years.

THE LIVESTOCK ECONOMY

Although the predominance of small farms should be favorable for the development of an intensive livestock industry, the proportion of animals to population is very low. Hog numbers per capita in Yugoslavia, former Poland, and former Austria are twice those in Rumania; and in Germany and Hungary three times as great.

TABLE 9.—*Livestock numbers in Rumania, 1937*

KIND	NUMBERS	KIND	NUMBERS
	<i>Thousands</i>		<i>Thousands</i>
Horses	2,065	Goats	408
Cattle	4,184	Hogs	3,170
Milk cows	2,110	Poultry	73,897
Sheep	12,373		

Compiled from official sources.

Meat consumption in Rumania is very low; in the years 1926-1935 it fluctuated between 5.5 and 11.2 pounds per person for the peasants and between 20.2 and 26.6 pounds for the urban population. The government has been attempting, however, to improve livestock breeds and encourage increased consumption. Rumanian exports of livestock and its products are relatively unimportant, and prospects for greater surpluses in the near future are not favorable. Increased exports are not possible without an increase in livestock numbers and the development of better breeds - conditions that depend in turn on the establishment of a better feedstuff basis and the peasant's adoption of advanced methods of animal husbandry.

Production of dairy products is insignificant. A total of only about 600 million gallons of milk is produced per year; a quantity barely sufficient to meet domestic needs in spite of the low level of domestic consumption. It is believed that

¹² Arcadian, Nicolas P., "Agricultural raw materials used in the Rumanian food industry," *Correspondence Economique Roumaine*, No. 3, 1939, p. 29.

no real progress can be made in the Rumanian dairy industry until the peasant's standard of living has been vastly improved. Certainly no exports may be expected within the next few years.

· AGRICULTURAL EXPORT TRADE

Although Rumania is predominantly an agricultural country (80 percent of the working population is engaged in agriculture), total farm exports represent less than 50 percent of the value of all exports. The bulk of nonagricultural exports consists of minerals, chiefly petroleum products. Exports of forest products account for about 10 percent of the total value. Table 10 shows the recent position of agricultural products in the total trade of Rumania.

TABLE 10 *Composition of Rumanian exports by value, 1939 with comparisons*

YEAR	ALL EXPORTS	AGRICULTURAL PRODUCTS		FOREST PRODUCTS		MINERAL PRODUCTS	
		TOTAL	PERCENTAGE OF ALL EXPORTS	TOTAL	PERCENTAGE OF ALL EXPORTS	TOTAL	PERCENTAGE OF ALL EXPORTS
	<i>Million lei¹</i>	<i>Million lei</i>	<i>Percent</i>	<i>Million lei</i>	<i>Percent</i>	<i>Million lei</i>	<i>Percent</i>
1929 ..	28,960	14,096	48.8	4,679	16.2	9,904	34.2
1934 ..	13,613	4,733	34.8	1,504	11.1	7,310	53.7
1935 ..	16,756	6,416	38.3	1,519	9.1	8,730	52.1
1936 ..	21,699	10,827	49.9	1,746	8.0	9,027	41.6
1937 ..	31,568	15,368	48.7	2,934	9.3	13,164	41.7
1938 ..	21,533	9,409	43.7	2,532	11.8	9,496	44.1
1939 ..	26,809	12,550	46.7	2,530	9.4	11,226	41.9

AGRI- CULTURAL EXPORTS	PLANT PRODUCTS (INCLUDING GRAINS)		GRAINS (INCLUDING FLOUR)		LIVESTOCK AND EDIBLE ANIMAL PRODUCTS	
	TOTAL	PERCENTAGE OF AGRI- CULTURAL EXPORTS	TOTAL	PERCENTAGE OF AGRI- CULTURAL EXPORTS	TOTAL	PERCENTAGE OF AGRI- CULTURAL EXPORTS
	<i>Million lei</i>	<i>Percent</i>	<i>Million lei</i>	<i>Percent</i>	<i>Million lei</i>	<i>Percent</i>
1929 ..	14,096	74.7	—	—	2,884	20.2
1934 ..	4,733	72.5	—	—	1,018	21.5
1935 ..	6,416	74.6	3,287	51.2	1,382	21.5
1936 ..	10,827	78.7	6,841	63.2	1,747	16.1
1937 ..	15,368	80.9	10,177	66.2	2,081	13.5
1938 ..	9,409	75.7	5,258	55.9	1,859	19.8
1939 ..	—	—	7,210	—	—	—

¹ One leu at the official rate of exchange = \$0.007035.

TABLE 11.—*Rumanian exports of agricultural products, 1933-1939*
[Net exports for calendar year]

PRODUCT	UNIT	1933	1934	1935	1936	1937	1938	1939
		: Thou-	: Thou-	: Thou-	: Thou-	: Thou-	: Thou-	: Thou-
		: sands	: sands	: sands	: sands	: sands	: sands	: sands
Grains:								
Corn	Bu.	42,206	20,869	24,993	30,366	20,598	9,521	19,932
Wheat	Bu.	223	5	9,274	22,439	36,786	32,420	40,781
Barley	Bu.	28,553	15,316	8,149	23,977	14,656	7,964	4,921
Oats	Bu.	1,615	28	1,144	1,174	1,211	0	0
Rye	Bu.	0	0	368	1,190	10,219	858	1,079
Oilseeds and legumes:								
Oilseeds	Ton	—	—	146	60	120	129	123
Oilcake	Ton	—	—	95	101	111	99	85
Legumes	Bu.	—	—	3,564	2,609	2,499	1,690	2,315
Fruits and nuts:								
Apples	Ton	—	—	11	26	18	11	11
Prunes	Ton	—	—	4	2	3	2	4
Grapes	Ton	1	2	2	2	2	2	—
Nuts	Ton	—	—	6	8	12	8	5
Livestock and products:								
Cattle	Head	16	46	69	41	43	40	—
Hogs	Head	105	71	43	204	190	197	—
Sheep	Head	2	95	79	19	19	46	—
Poultry	Head	2,568	3,504	3,192	2,830	2,533	1,248	—
Animal products	Ton	15	16	17	25	23	21	—

Compiled from *International Yearbook of Agricultural Statistics* and various official sources.

TABLE 12.—*Rumanian exports of grains, averages 1928-1932, 1933-1937,*
and 1935-1939

PERIOD	CORN	WHEAT	BARLEY	OATS	RYE
	: Bushels	: Bushels	: Bushels	: Bushels	: Bushels
1928-1932	37,720	11,363	42,164	3,062	1,457
1933-1937	27,806	13,743	18,130	1,034	2,355
1935-1939	21,082	28,340	11,933	706	2,743
	:	:	:	:	:

Compiled from official sources.

Exports of grains, constituting from half to two-thirds of the total agricultural exports, reflect clearly the characteristic sharp fluctuations in production. Corn exports ranged during the last 5 years from a low of 9.5 million bushels in 1938 to a high of 30.4 million in 1936. On the whole, however, the volume of corn exports is declining; the 1935-1939 level was 17.5 percent below that of 1928-1932.

The wheat export situation has improved significantly since 1933, largely because of the sharp increase in acreage and production. Although the Rumanian govern-

ment recommended reduction of the wheat acreage infavor of feed crops and industrial plants, its policy actually stimulated increased production and exports of wheat. Government support of the wheat market is still being continued.

Barley exports have greatly diminished as a result of the acreage reduction since 1933; the volume of exports during 1935-1939 was only 29.3 percent of that during 1928-1932. Reduced acreage and production caused a similar, though sharper, decrease in exports of oats, and in 1938 and 1939 no shipments at all were made.

Despite the activities of the German-controlled Soia Company, which purchases the entire soybean crop for shipment to Germany at high fixed prices, the export volume of all oilseeds has not expanded during the last few years. An increase in soybean exports has been accompanied by a reduction in shipments of rapeseed and sunflower seed, as well as of oilcake. Exports of legumes fluctuate around a level of 2.5 million bushels annually.

Fruit exports as a whole are insignificant, averaging only 28,000 tons annually during 1935-1939. A maximum of 38,000 tons was exported in 1935 as compared with a minimum of 20,000 in 1939. The relative unimportance of these exports is apparent when this figure is contrasted with German fruit imports during 1938 of 536,000 tons.

Exports of livestock products fluctuate in accordance with the domestic feed situation. Live animals represent about 50 percent of the export value of the animal products group. The maximum quantities available for export in any year since 1933 were 200,000 hogs and 70,000 cattle, equal to about 30,000 tons of dressed meat. The annual exportation of animal products has never exceeded 25,000 tons

GEOGRAPHIC DISTRIBUTION OF RUMANIAN FOREIGN TRADE

With the German domination of Rumania, as well as of practically all the countries of central and northwestern Europe, future Rumanian trade relations will undoubtedly be largely controlled by Germany. Nevertheless an analysis of the geographic distribution of Rumanian agricultural exports during the past few years is of more than theoretical interest. It reveals the dependence of various European importers on Rumanian farm products and the extent to which anticipated changes are likely to alter the direction and volume of such exports.

GERMAN RUMANIAN TRADE RELATIONS

In spite of its territorial expansion after the World War, Rumania suffered severely from the trade dislocations following the breakdown of the Austro-Hungarian monarchy. The export situation became even more critical during the world depression. As a result the government was forced to institute rigid foreign exchange control and other regulations to control the nation's foreign trade and international payments, with most trade regulated by clearing agreements. Transactions with free-exchange countries, however, furnished most of the active trade balance

necessary to obtain sufficient foreign exchange for servicing the foreign debt and for imports of such essential products as cotton, iron ore, and machinery.

Germany began its economic drive into southeastern Europe in 1934, at a time when the Danubian countries faced serious difficulties in disposing of their agricultural surpluses. Since the Danubian countries export principally farm products and raw materials (needed by the Reich) and import manufactured products that Germany can normally supply, this complementary trade greatly facilitated transactions between Germany and the Southeast.

The proximity of the Danubian states to Germany, especially important under blockade conditions, also favored the flow of trade between the countries. In addition, the controlled trade and exchange conditions of the Danubian countries could easily be adjusted to German foreign trade methods, since most of the German clearing agreements provided for a complete balance of exports and imports through clearing accounts, which did not require the acquisition of foreign exchange.

Normally these favorable conditions should have enormously increased trade relations between Germany and the countries of the Danube Basin; however, the expansion was in most cases far less rapid than was anticipated, partly because of Germany's inability to export the desired quantities and qualities of manufactured goods. This inability may in turn be attributed to the fact that the German rearmament program taxed the nation's economy so severely that the demands of the Danubian countries for industrial goods could not be supplied.

The trade situation was further complicated by the fact that Germany was in a position to drive hard bargains and frequently forced upon the southeastern countries products that they did not need, or allowed clearing balances to pile up in the German favor, thus virtually borrowing funds from the Danubian states.¹³ Delayed deliveries of German goods, often of unsatisfactory quality, together with the desire of the Danubian countries to avoid a German trade monopoly, served to prevent a more pronounced expansion of their trade with Germany.

The absorption of Austria and Czechoslovakia tremendously increased the German sphere of influence. As far as Rumanian farm exports were concerned, however, the effects were slight. A comparison of Germany's share in Rumanian exports during 1928-1932 with its share during the subsequent trade drive in southeastern Europe shows that Germany and Austria together took 27.5 percent of all Rumanian exports before and only 28.1 percent during the drive. Including Czechoslovakia, the share of Greater Germany during these two periods was 34.1 and 36.4 percent, respectively.

In March 1939 a new German-Rumanian trade agreement was concluded, which originally provided for a complete reorientation of Rumanian economy in accordance with German import needs. Since the agreement stipulated that a bilaterally balanced trade should continue to be maintained and that the requirements and interests of

¹³ Richter, Hans. "Southeastern Europe's trade increasingly dominated by Germany," *Foreign Agriculture*, vol. III, May 1939, pp. 169-174.

Rumania in her trade with other countries were to be considered, no immediate sharp expansion in trade was anticipated. It is significant, however, that in 1939 Greater Germany purchased 43.2 percent of the total Rumanian exports, largely as a result of the agreement. In the same year Greater Germany furnished 56.1 percent of the Rumanian import needs, as compared with 53.6 percent in 1935-1939 and 48.8 percent in 1928-1932.

TRADE RELATIONS WITH COUNTRIES OTHER THAN GERMANY

In spite of the decided tendency to strengthen trade with Germany, the necessity for securing raw materials and manufactured goods that Germany could not supply forced Rumania to maintain trade with free-currency countries. To such countries as Belgium, the Netherlands, Denmark, and Poland - now under complete German domination - Rumania sold 7.4 percent of her exports in 1935-1937 and bought from them 6.7 percent of her total imports.

Italy also exerted effort in 1939 to intensify her trade relations with Rumania. The Italian-Rumanian trade agreement effective January 1, 1939, envisaged an annual volume of trade valued at 5 billion lei (about 37 million dollars). In the 5 preceding years total annual trade had never exceeded 3.5 billion lei, and in 1938 it amounted to only 2.5 billion.¹⁴ The largest increase proposed was on Italian imports of wheat and petroleum, which Germany also needs. Actually, Italian-Rumanian trade in 1939 reached a value of 5.236 billion lei, with Italy taking 12.1 percent of Rumania's exports as compared with 6.2 percent in 1938 and 9.3 percent in 1935-1939. Rumanian imports of Italian products rose from 5 percent in 1938 and 5.5 percent in 1935-1939 to 8.9 percent in 1939.

A trade agreement with the United Kingdom also resulted in a sharp increase in Rumanian exports to that market; in 1939 the United Kingdom took 14.1 percent of total Rumanian exports as compared with 11.1 percent in 1938. On the other hand, Rumanian imports from that market decreased. Since it is unlikely that British-Rumanian trade can be maintained during the war, former Rumanian exports to Britain appear virtually the only potential reserve for increased exports to the agriculturally deficient countries of the Continent. Any attempt by Greater Germany or Italy to import quantities of Rumanian agricultural surpluses larger than their 1939 takings - plus Britain's former share - would further deprive the other Danubian countries, as well as Switzerland and the German-dominated territories, of part of the imports they formerly took from Rumania.

GEOGRAPHIC DISTRIBUTION OF RUMANIAN FARM EXPORTS

As a consequence of the recent political rearrangements, the geographic distribution of Rumanian farm surpluses is expected to show significant changes from the distribution prevailing before the outbreak of war.

¹⁴ U. S. Department of Agriculture, Special Rept. No. 368 of the Agricultural Attaché, "Rumania. recent trade agreements," Belgrade, Yugoslavia, Jan. 4, 1939.

In order to determine the nature of the changes expected in geographic distribution of Rumanian farm exports it is necessary to examine the direction of farm exports during the last few years. The actual trend in the near future will depend largely on the size of current crops, changes in domestic consumption, the degree of disorganization of trade routes, availability of transportation facilities, and the willingness of Germany and Italy to admit former Rumanian customers now under their domination to participate in the purchase of Rumanian agricultural surpluses.

Bread grains: Germany began to purchase Rumanian wheat in 1937, when the German policy of storing bread grains for emergency purposes was initiated. German purchases in 1939 give a better indication of the potential future minimum demand on Rumania than would an average covering years during which Germany had access to overseas markets. Thus in 1939 Greater Germany took 25 percent of Rumanian wheat exports, at a time when German wheat production reached a near-record level.

The share of the United Kingdom in total Rumanian wheat exports in 1939 was 31 percent. The wheat formerly exported to Britain may now serve to offset to some extent the deficiencies in Germany, as well as in the territories under German domination, which purchased about 20 percent of the Rumanian wheat surplus during 1935-1939. Italy's share increased sharply in 1939 over the 2 preceding years, but Italy had been a large importer of Rumanian wheat in 1935 and 1936. Of the small Rumanian rye surplus, Greater Germany usually has bought either the total supply or the largest part, except in 1939, when Italy and the countries now dominated by Germany took two-thirds.

Feed grains: The European feedstuff situation is likely to remain critical even in years of unusually large Danubian surpluses. As long as the British blockade is in force, Germany and the other European livestock-producing countries that are deficient in feedstuffs will be deprived of most of their imports of corn and concentrated feeds, which they had purchased regularly from overseas countries. Germany proper did not depend greatly on Rumanian corn before the outbreak of the war except in 1937, when it took 60 percent of the Rumanian surplus. During 1935-1939 the German share was only 25 percent. The proportion taken by Greater Germany, however, represented 50 percent of the total. The Netherlands, Belgium, and Denmark increased their Rumanian purchases to 16 percent in 1938 and 10 percent in 1939; however, if their livestock industries are to be maintained at even present levels, a much greater volume of exports to these countries will be necessary.

Great Britain's share in Rumanian corn exports of 30 and 23 percent in 1938 and 1939, respectively, would if diverted to the occupied countries ease the feedstuffs situation there, but both Germany and Italy will undoubtedly demand much greater quantities from Rumania than before the war. Rumanian exports of corn to other southeastern European countries, amounting to 17 percent of the total in 1935-1939, cannot be curtailed without endangering the livestock exportation of those countries to Germany and Italy.

The geographic distribution of Rumania's exports of barley was similar to that of corn during 1935-1939. Since 1937, however, Greater Germany's share has

increased sharply. Of total Rumanian barley exports in recent years, between two-thirds and three-fourths has gone to Germany, Austria, and Czechoslovakia. Greater Germany took 60 percent of the exports, and the remainder went to Hungary and other European livestock-producing countries.

Denmark and the Netherlands imported nearly half of the Rumanian surplus of oilcake. The 16 percent taken by England and France, now divertable to other countries, cannot offset the serious deficiency in the Netherlands, Denmark, and Germany. The bulk of the Rumanian oilseed exports was taken by Greater Germany; only small quantities went to Italy and the conquered territories. Because of the cession of Bessarabia, the Rumanian oilseed crops cannot meet even domestic requirements. One-fifth of the legumes was formerly shipped to Great Britain and France; Germany had increased its share to 62 percent in 1939. The small surplus of fruit went almost exclusively to Greater Germany.

POTENTIAL FARM SURPLUSES DURING AND AFTER 1940-41

The preceding discussion has pertained to Greater Rumania, including Bessarabia and northern Bukovina, now ceded to the Soviet Union; northern Transylvania, now ceded to Hungary; and southern Dobrogea, now ceded to Bulgaria. The ceded territories represent important farm-surplus-producing areas, and their loss is bound to affect the future volume of Rumanian farm production and exports. The surpluses of the territories ceded to Hungary and Bulgaria will still be available to continental Europe in the future. These territorial changes, therefore, affect merely the agricultural economies of the immediate countries concerned. The cession of Bessarabia and northern Bukovina to Russia, however, probably represents a definite loss of important surpluses to the European deficit countries.

Bessarabia and northern Bukovina covered an area of about 12 million acres, or 17 percent of the area of Greater Rumania. The relative loss in arable land is even greater, amounting to 8 million acres, or 23 percent of the former total arable area. The loss of these two territories will noticeably reduce the volume of most farm exports, since they contributed normally nearly 19 percent of the total Rumanian wheat production and over 20 percent of the corn. The relative loss in this year's grain output is much greater, since Bessarabia is the only section that did not suffer from the heavy rains which damaged crops throughout the Danube Basin.

The cession of Bessarabia and northern Bukovina also resulted in the loss of 29 percent of the potato crop and 32 percent of the sugar beets. These losses, however, will affect only the domestic economy. On the other hand, a reduction of 17 percent in cattle numbers and of 20 percent in numbers of hogs and sheep will probably correspondingly reduce the exports of animal products. Although little livestock was exported from Bessarabia, some quantities were shipped to deficit regions within Rumania.

The effect of these territorial losses on the future exports of oleaginous products is especially serious. The loss of Bessarabia, where in 1938 75 percent of

the total sunflower seeds and 80 percent of all the soybeans were produced, will make it impossible for Rumania to export oilseeds for many years. Even domestic requirements, in fact, will probably not be supplied.

The principal result of the cession to Hungary of mountainous northern Transylvania is that future Rumanian grain production will be reduced by about 9 percent. This loss reduced the total area of Rumania by 14 percent and the population by about 13 percent.

The cession of southern Dobrogea will affect Rumanian economy less seriously than the loss of Bessarabia. It will, however, considerably increase Bulgarian surpluses: the Bulgarian wheat crop will be increased by 9 percent; the rye crop by 45 percent; corn and barley, 18 percent; oats, 12 percent; and dry beans, 67 percent. Southern Dobrogea is very fertile; nearly 70 percent of the total area is in grains.

THE 1940 OUTLOOK

The Rumanian crops of 1940 were affected by two unfavorable factors - one directly connected with the war and the other resulting from the adverse climatic conditions during last winter and spring.

Like most other countries of southeastern Europe, Rumania felt obliged to mobilize an army of between 1.5 and 2 million men, who as a result were not available for their peacetime occupations, chiefly farming. Although much farm work is performed by women and children, the mobilization as well as the withdrawal of many draft animals for military use, is known to have affected production adversely. Rumania did not yield to the German demand that men be returned to their farms to plant the spring cereals, and the compromise of putting youth to work on farms only partly overcame the acute labor shortage. The principal result was a sharp reduction in the area sown to winter cereals. However, a large proportion of the army was released in July, so that the shortage was somewhat relieved at harvest time.

The resulting situation appears to have been especially harmful to the wheat crop. According to the latest semiofficial information, the decrease in acreage, combined with the effects of the exceptionally severe winter, late and rainy spring, and devastation by floods, resulted in a total wheat crop in Greater Rumania of only 89 million bushels, as compared with 164 million in 1939 and 177 million in 1938. This would mean a reduction of 45.7 percent from 1939 and 49.7 percent from 1938.

The loss of Bessarabia and northern Bukovina further aggravated the wheat situation for the 1940-41 marketing year. Indications are that the present territory of Rumania produced only 60 million bushels this year; adding the estimated carry-over of 17 million leaves a total supply of about 77 million bushels. Assuming normal consumption, domestic requirements will amount to 93 million bushels, or 26 million more than the estimated crop.

The Rumanian Government has prohibited exportation of wheat in order to safeguard supplies for domestic consumption; moreover, it is contemplating an enforced

reduction of the wheat content of flour. This procedure may somewhat alleviate the anticipated domestic shortage, but will not provide export surpluses in 1940-41. Furthermore, the army mobilization resulted in a sharp increase in domestic wheat consumption: although the Rumanian farmer consumes very little wheat, as a soldier he receives a much more nearly adequate diet and consumes an even higher bread ration than the average Rumanian city dweller. For all these reasons, it is certain that wheat exports will be impossible in 1940-41, despite pressure from the belligerents. Undoubtedly, German demands for the army of occupation represent an added strain.

This year's rye crop of about 7 million bushels (for present boundaries) will meet only about 40 percent of domestic requirements. In view of the shortage the government has prohibited all rye exports.

Exports of barley have been prohibited since November 1939. The 1940 crop is believed to be about 5 million bushels in excess of domestic requirements. Rumania has had no surplus of oats during the last few years, and exports have been prohibited since October 18, 1939.

The corn situation looks somewhat more promising. The government urgently recommended the planting of corn and barley this spring on a part of the acreage that could not be sown to wheat last fall. Semiofficial estimates place the 1940 corn crop for present boundaries at about 160 million bushels and the 1939 carry-over at 15 million; domestic requirements are estimated at about 155 million bushels. The supply, however, is not sufficient to compensate for the shortage of wheat and rye. Any corn exports would be at the cost of further reducing the Rumanian standard of living, which is already low.

Prospects for increased exports of oilseeds are unfavorable. Even before the cession of Bessarabia and northern Bukovina exports of sunflower, castor, rape, hemp, and flaxseed were prohibited; the present territory does not produce enough oilseeds to meet domestic requirements. The soybean situation has completely changed as a result of the territorial losses. Since most of the soybean and sunflower seed was produced in Bessarabia, Rumania will face serious difficulties in meeting domestic requirements. Rumanian soybean plantings in 1940 amounted to only 54,000 acres, as compared with 256,000 in 1939, and production was no doubt correspondingly reduced.

Little information is available concerning prospects for the exportation of animal products. Meat consumption has been restricted by the introduction of three meatless days a week. Mobilization and the intensified rearmament program have, however, increased sharply the number of meat consumers and the per-capita consumption. It is certain that no increase in exports is possible; in fact, a decrease is likely in view of the damage suffered by livestock as a result of floods. The cession of Bessarabia and northern Bukovina will also tend to reduce livestock exports.

THE OUTLOOK AFTER 1940 1941

Unquestionably, Rumanian farm production - especially of animal products and farm products for industrial use - could be greatly expanded in the future if certain

prerequisites were fulfilled. Among these prerequisites are the widespread education of peasants in the science of modern agriculture, adoption of improved methods of farming and livestock breeding, of greater attention to seed selection, increased use of fertilizers and modern agricultural machinery, and elimination of strip farming - in short, a reorganization of the entire Rumanian farm economy.

THE FIVE YEAR PLAN

During the past 5 or 6 years effort has been made toward accomplishment of these objectives, stimulated especially by the law of March 1937 for the encouragement of Rumanian agriculture. Moreover, the German-Rumanian trade agreement of 1939 provided for a sweeping reorganization of agriculture under the supervision of German experts. The Agricultural Five-Year Plan, drawn up by the Rumanian Minister of Agriculture in March 1940, is the latest attempt in this direction. In spite of all these measures, however, little fundamental improvement has yet been accomplished.

The object of the Five-Year Plan is much the same as that of the 1937 law and of the German proposals in the trade agreement. Recognizing the necessity of a far-reaching educational program, the plan provides for the establishment of a network of farm organizations to secure the active cooperation of the farmers. It also recognizes that a prerequisite for the improvement of agricultural conditions is the stabilization and consolidation of farm ownership, and toward that end is proceeding with the division of land - which has not been completed even after 20 years of agrarian reform - and the consolidation of strip farms. Many economists believe, however, that consolidation of strip farms is impossible except under a system that will entirely disregard individual rights.

Although it is realized that grain crops produce the best results under existing conditions and require less care and labor than other crops, the Five-Year Plan¹⁵ provides for a reduction during the next 5 years of 2 million acres, or 25 percent, in the present wheat acreage. Corn acreage is to be reduced by 12 percent. The present level of production, however, is to be maintained and even increased by improving yields through better seed selection, the application of fertilizers, and the control of plant diseases. The acreage retired from grain crops, together with 700,000 acres of reclaimed wastelands, is to be used to expand production of industrial and fodder crops.

Considering the present status of the Rumanian peasant, it is obvious that the objectives of the Five-Year Plan cannot be realized within the next few years. Nevertheless, the plan suggests the possibility of interesting modifications in Rumanian farm production over a longer period of time.

Altogether the plan would involve the transfer of 4.2 million acres formerly planted to corn and wheat - with which the peasant is sufficiently familiar to obtain at least low yields - to crops that require more care and more intensive preparation,

¹⁵ The plan was set up prior to the recent territorial changes. Undoubtedly the territorial losses will effect corresponding changes in the production plans

with the cultivation of which the peasant is largely unfamiliar. The educational preparation necessary cannot be accomplished in a short time under existing conditions. Furthermore, it is recognized that a sharp increase in the use of fertilizers, especially phosphate, is essential; and there is now a shortage of phosphates in all countries under German domination and in Germany itself. It is also doubtful whether farm machinery can be made available to nearly the number of units called for by the plan.

TABLE 13.—*Proposed acreage changes in crops other than grains under the Rumanian Five-Year Plan*

CROP	AVERAGE ACREAGE	AREA TO BE	INCREASE
	1935-1939	SOWN BY 1944	OVER 1935-1939
	1,000 acres	1,000 acres	Percent
Fiber plants:			
Flax	6.3	297	4,600
Hemp	126.3	371	290
Cotton	11.9	259	2,100
Oilseeds:			
Sunflower seed	472	741	57
Rapeseed	88	371	70
Poppies	6	18	200
Peanuts	0	5	—
Castor beans	3	30	900
Legumes:			
Peas	116	494	330
Beans	225	494	120
Lentils	44	173	290
Soybeans	163	395	140
Forage crops:			
Alfalfa	347	494	42
Clover	450	618	37
Beets	111	247	120
Sugar beets	97	148	50

Compiled from official sources.

CONCLUSIONS

Although it is impossible to evaluate possible developments, it appears certain that no more than minor changes in Rumanian agriculture may be expected within the next few years. This conclusion is based on an appraisal of the difficulties previously mentioned, of the additional complications caused by the war, and of the many unsuccessful attempts at production expansion in the past. In general it is believed that the existing pattern of Rumanian production will continue for at least the next 2 or 3 years. There may be some increase in oilseed and legume acreage; however, in view of the current war-induced shortages in European grain supplies, it can hardly be expected that the Rumanian peasants or the government itself will be induced to curtail cereal acreage in favor of industrial crops.

The Five-Year Plan recognizes that in many sections of Rumania the diet of the peasants is often unvaried and poor, and that any expansion and diversification of production must be accompanied by an improvement in the peasant's standard of living. Such an improvement, however, would necessitate increased domestic consumption, which in turn would tend to limit any increase in export surpluses.

During the present war any significant expansion of production is unlikely. There appears to be little probability of a material increase in exports during 1941 and 1942 from the reduced territories of Rumania. The cession of Bessarabia and northern Bukovina will reduce the exports of grains by at least 20 percent from the pre-war average. Many years will probably be required before exportation of oil-seeds, legumes, and other specialty crops will again be possible. On the whole, it appears unlikely that either the composition or magnitude of Rumanian farm production will show any important change during the next several years, insofar as meeting the deficits of other European countries is concerned.

HUNGARY

Although far less important than Rumania as a supplier of agricultural products to the deficit countries of Europe after the World War, Hungary regularly furnished large exports of wheat, some surpluses of live animals and meat products, and various crop specialties. The pattern of farm production in Hungary is similar to that of Rumania, but the structure of its farm economy, its production methods, and the general problems confronting agriculture are sufficiently different to warrant consideration.

THE AGRICULTURAL STRUCTURE OF HUNGARY

Pre-World-War Hungary, with a population of 21 million, was an integral part of the Austro-Hungarian monarchy. Hungarian agriculture had at its disposal a free market of more than 50 million consumers. Largely because of natural advantages, pre-World-War governmental policy was directed toward maintaining the predominantly agricultural character of the country, except for industries closely connected with agriculture, such as the milling industry, sugar refining, and other enterprises processing farm products.

Hungary probably suffered more than any other Danubian country from the changes brought about by the peace treaties following the World War. The Treaty of Trianon reduced the area of Hungary to less than one-third its former size and the population to about 8 million people. These dislocations could not be overcome without many difficulties and great strain on the national economy. Lack of markets for the agricultural surpluses immediately after the World War, the resulting difficulty in settling the international balance of payments, and the impossibility of employing the bulk of the working population in agriculture naturally resulted in increased industrialization during the post-war period.

Statistics on occupational distribution reveal that post-war Hungary has been rapidly losing its character as a predominantly agricultural country, and that the

post-war population increase has been absorbed largely by nonagricultural industries. Territorial acquisitions following the dismemberment of Czechoslovakia did not basically alter the economic structure, although they increased Hungary's area by about 13 percent and its population by about 12 percent. The annexation of northern Transylvania in 1940 further increased the Hungarian population by 2.4 million and the crop acreage by 3.7 million acres, or about 27 percent.

The farm economy of pre-World-War Hungary had a pronounced feudal character. Nearly a third of the area was held by 4,000 large estates, whereas 2.4 million peasants owned little more than half the total area. Unlike the situation in Rumania, there were about 800,000 farm workers without land, who constituted the principal labor force of the estates. There were 500,000 peasants whose average holdings of 2 or 3 acres were insufficient to provide a living, and who for that reason might also be included in the category of landless rural workers.

POST-WORLD-WAR LAND REFORM MEASURES

Land reform after the World War changed the distribution of holdings comparatively little. About 36 percent of the total area is still owned by a few large proprietors and only 47 percent by the peasants.¹⁶ The agrarian law of 1920 was not intended to bring about a radical division of large estates, as in Rumania, but merely to give small holdings to landless farm workers. The size of these holdings, however, was fixed at 4.2 acres, far too low to provide even a meager subsistence. It is estimated that between 1920 and 1935 the area in estates was reduced from 8.2 million acres to 6.8 million, or by 17.2 percent. At the same time, the area in small holdings increased from 10.9 to 11.9 million acres, and the number of landless workers declined from 754,000 to 563,000. At present, however, 43 percent of the farm land is still held by large estates, averaging 5,613 acres in size, and by farms exceeding 280 acres. Of these estates 1,300, or only 0.1 percent of total holdings, comprise 30 percent of all farm land. On the other hand, 85 percent of all farms are less than 14 acres in size and constitute less than 20 percent of the total farm land. Fully 40 percent of the farm population is still without any land.

Thus, of a total population of 9 million in the 1930's the landless workers with their families constituted 1.3 million, or 14 percent. An additional 600,000 workers, or 7 percent, were permanently employed on large farms and estates, while 1.1 million people, or 12 percent, lived on farms of less than 7 acres, where they existed on an extremely low standard of living. These "3 million beggars" constitute one of the most serious economic and political problems confronting Hungary.¹⁷

The need for further land reform measures has been recognized by the government, and attempts have been made to remedy the situation. The Settlement Act, adopted in 1936, offered a plan for progressive liberation of entailed properties.

¹⁶ *Hungarian Economic Yearbook*, 1939, p. 23

¹⁷ *Ibid.*; also Jászai, Oscar, "Feudal agrarianism in Hungary," *Foreign Affairs*, July 1938, p. 714; and U. S. Department of Agriculture, Office of Foreign Agricultural Relations, Special Rept. No. 366, "Hungarian agricultural policy in 1938," Belgrade, Dec. 12, 1938.

More than a quarter of the land in Hungary is entailed, and belongs to the church, to municipalities, or to banks; or it represents *Fidei Kommissse* (properties with family entail). The law provided for a gradual distribution to the peasants of about 300,000 acres of such entailed land. Furthermore, the Settlement Act was intended to assist small peasant farmers in expanding their farms to a more efficient size of between 7 and 14 acres. So far little progress has been made under the Act. Early in 1939 a total of only 40,000 acres had been leased to 13,000 families.

In connection with a far-reaching 5-year plan of rearmament and reconstruction initiated in March 1938, an acceleration of rural settlement, with emphasis on small leaseholds, was planned. Under the plan 1.1 million acres, or about 17 percent of the acreage still held in large estates, was to be used for settlement purposes over a period of years. A new bill introduced in January 1939 would make available for small leaseholds 2.4 million acres to be taken from large estates, from Jewish landowners, and from foreigners.

PROBABLE EFFECTS OF LAND REFORM MEASURES

The realization of the proposed Hungarian land reform measures may somewhat alleviate the present plight of the rural proletariat, but no radical or prompt change may be expected. In appraising the fundamental position of the Hungarian farm economy, it must be remembered that even a far more radical land reform - that is, the distribution among farm workers and small peasants of the total acreage now held by large estates - would still fail to provide these groups with holdings of even sub-marginal size.

In contrast to Rumania, where the breaking up of the large estates resulted in a relative deterioration of farm practices and a corresponding decline in exportable surpluses, the Hungarian land reform measures thus far have not appreciably affected farming methods, the composition of total farm production, or altered the prospect for potential surpluses.

Farm practices on the larger farms in Hungary are far superior to those of the peasant holdings in other countries in southeastern Europe, and are more nearly comparable to those in western Europe. Since the Hungarian farm economy is characterized by a large number of farm laborers accustomed to the relatively advanced methods of the large estates, it is probable that even with a rapid expansion of small leaseholds the general farm practices would still remain far superior to those of Rumania. Nevertheless, the peasants are in urgent need of agricultural training. The government is said to be considering plans for the improvement of agricultural education.

Should proposed land reform measures be carried out, certain shifts in farm production could be expected to take place - from crop to livestock production, for example, and from cereals to industrial crops. It is unlikely, however, that such reforms would result in an expansion of total farm production; it is more probable that these shifts would tend to raise the living standards of peasants and farm laborers and to decrease the volume of farm products available for export.

PATTERN OF HUNGARIAN FARM PRODUCTION

The character of Hungarian farm production is largely determined by natural and climatic conditions, and only partly by the system of land distribution. Hungary is a level country, 60 percent of the total area consisting of arable land. The great Danubian plain, covering the central and eastern sections, constitutes the greater part of the country; the northwestern part is formed by the small Danubian plain. As a result Hungary possesses a larger share of prairie soil than any other country of southeastern Europe. This in itself explains the predominance of grain crops, particularly of wheat, in the Hungarian farming system.

LAND UTILIZATION

Table 14 gives a concise picture of the land utilization in Hungary in 1938. Grain crops occupied 73.4 percent of the total agricultural land. Wheat was the most important single crop, accounting for 28.4 percent of the arable area, followed by corn with 19.5 percent. The acreage planted to rye, barley, and oats together was less than that of wheat alone, and only slightly more than that of corn. Aside from cereals the potato crop was the only one of great importance, accounting for 5.2 percent of the cultivated area. Legumes and vegetables constitute only about 1 percent each. It should be noted, however, that legumes and other vegetables are grown chiefly in household gardens and are not recorded in official statistics, which include only the crop grown on areas registered in the "Land-book." Industrial crops, of which sugar beets alone made up 0.8 percent, were grown on 2.1 percent of the arable land.

DEVELOPMENT OF CROP ACREAGES

Table 15 shows the changes in the distribution of crop acreage during the last decade. It should be noted that the 1939 figures are not strictly comparable with those for the preceding years, since they include acreages of the newly acquired territories. According to official estimates,¹⁸ the acquisition of new territories in 1938 and 1939 increased wheat acreage by 13 percent, of rye by 16 percent, barley by 23 percent, oats 5.5 percent, potatoes 19 percent, and sugar beets 50 percent. Northern Transylvania added another 18 percent to Hungarian wheat production, 22 percent to corn, about 9 percent to rye and barley, and 37 percent to oats.

Except for the usual annual fluctuations, and disregarding territorial acquisitions, the total grain acreage has remained remarkably stable. The average grain acreage during 1935-1939 was about equal to that for 1928-1932. The Hungarian Government has repeatedly recommended a shift from grains to legumes and industrial plants. Thus far, however, virtually no changes have occurred in the acreages devoted to industrial plants. Certain shifts in legume acreage have taken place, but without any marked upward trend.

¹⁸ International Institute of Agriculture, *Monthly Bulletin of Agricultural Economics and Sociology*, Feb. 1939.

TABLE 14. Land utilization Hungary, 1938

LAND USE	ACREAGE	PERCENTAGE OF TOTAL AREA
	<i>1,000 acres</i>	<i>Percent</i>
Total area of Hungary	23,000	100.0
Arable land	13,865	60.3
Permanent meadows and pastures ...	1,596	6.9
Tree and bush crops	828	3.6
Woods and forests	2,728	11.9
Uncultivated productive land	14	.3
Unproductive land	1,512	6.6
		<i>Percent of arable land</i>
Grains	10,178	73.4
Winter wheat	3,954	28.5
Spring wheat	54	.4
Corn	2,907	19.5
Spring barley	909	6.6
Winter barley	214	1.6
Rye and maslin	1,564	11.3
Oats	554	4.0
Food crops	971	7.0
Total legumes	124	.9
Beans, dry	10	.1
Lentils	35	.2
Peas, dry	79	.6
Potatoes	719	5.2
Cabbage	15	.1
Melons and watermelons	42	.3
Onions	15	.1
Fiber plants:		
Hemp	37	.2
Flax	8	.1
Oleaginous plants:		
Hemp	35	.2
Flax	20	.1
Rape	27	.2
Poppy	20	.1
Sunflowers	17	.1
Other plants		
Sugar beets	109	.8
Tobacco	35	.2
	<i>Million</i>	
Fruit trees	33.6	
Plum	9.6	
Apple	6.0	

The total acreage in fibers during 1935-1938 was still the same as that for 1928-1932. Flax covered a smaller acreage, but the reduction was offset by a corresponding increase in hemp acreage. Shifts also occurred in acreage of the various oleaginous plants, but no real expansion took place. German sources state that the Hungarian Government realizes now that shifts from grains to industrial plants cannot be obtained merely by propaganda methods, and that some form of coercion must be exercised.

TABLE 15.-Hungarian crop acreage, averages 1928-1932, 1933-1937, 1935-1939;
annual 1935 to 1939

CROP	AVERAGES				1935	1936	1937	1938	1939
	1928 1932	1933 1937	1935 1939	1935 1939					
	: 1,000	: 1,000	: 1,000	: 1,000	: 1,000	: 1,000	: 1,000	: 1,000	: 1,000
Grains	: acres	: acres	: acres	: acres	: acres	: acres	: acres	: acres	: acres
Wheat	3,968	3,910	3,957	4,135	4,028	3,665	4,000	4,669	
Corn	2,726	2,840	2,877	2,843	2,810	2,954	2,901	3,150	
Rye	1,576	1,581	1,551	1,537	1,607	1,499	1,562	1,728	
Barley ..	1,132	1,150	1,124	1,057	1,161	1,155	1,121	1,344	
Oats	635	545	539	502	529	570	554	636	
	:	:	: 1935 1938	:	:	:	:	:	:
Legumes	:	109	115	101	111	124	124	-	
Beans	:	11	10	9	10	10	10	-	
Peas	:	60	69	56	64	77	79	-	
Lentils ..	:	38	36	36	37	37	35	-	
Potatoes	694	720	719	694	734	729	719	-	
Hemp	20	28	32	22	32	35	37	-	
Flax	22	12	9	10	10	10	7	-	
Oilseeds	-	106	101	107	88	95	114	-	
Poppy seeds	:	28	19	10	17	20	20	-	
Linseed ..	22	27	27	30	22	25	30	-	
Hempseed ..	20	28	32	22	32	35	37	-	
Rapeseed ..	25	24	24	37	17	15	27	-	
Sugar beets ..	156	115	116	116	121	116	109	-	
Tobacco	59	39	36	37	37	35	35	-	
	:	:	:	:	:	:	:	:	:

Compiled from *International Yearbook of Agricultural Statistics* and various official sources.

VARIATIONS IN CROP YIELDS

The average level of crop yields in Hungary far surpasses that of Rumania and the other Danubian countries. This is due partly to soil properties and partly to more advanced farming methods.

Except for a relatively small unproductive section of the Great Plain and a sandy region in the northeast, the prairie soil is rich in plant nutrients and is especially favorable for cereals. The climate, however, is characterized by extremes of heat and cold, and by drought and torrential rains. Generally, there are annually two periods of 2 or more weeks of drought, frequently occurring in the growing

season. A further danger to crop yields arises from winds in March and April that dry out the newly turned furrows.¹⁹

The methods of moisture conservation, particularly on peasant farms, are frequently insufficient to overcome these handicaps. The situation may eventually be improved by a reforestation of the Great Plain. Although special provisions have been made since 1923 to reforest selected regions, only 90,000 acres of a total of 750,000 in need of reforestation had been improved by 1936. More extensive irrigation and reforestation plans have recently been proposed, but no significant change may be expected for many years.

The Hungarian yields of grain crops, unlike those of Rumania, have not declined as compared with the pre-World-War period. With the exception of rye, the average yields during 1935-1939 were higher than in 1909-1913 or in 1928-1932, due largely to the favorable corn yield in 1936-1938 and the heavy wheat, barley, and oat crops in 1938 and 1939. Wheat shows relatively the least instability in yield. During 1930-1938, the average deviation from the mean yield was 10 percent. This is little more than half the amplitude of variation existing in Rumania. Nevertheless, there was a wide difference between the minimum yield of 17 bushels per acre in 1934 and the maximum of 24.7 in 1938.

Corn yields are extremely variable: the average deviation from the mean yield during 1930-1938 amounted to 21.1 percent, as compared with the average deviation in Rumania of 9.9 percent. During 1930-1938 Hungarian corn yields fluctuated from a minimum of 19.6 bushels per acre to a maximum of 36.8 bushels, a maximum difference of 88 percent. The variation in yield of barley, oats, and rye is slightly larger than of wheat.

Since changes in the total grain acreage were slight during the last decade - disregarding territorial changes - the fluctuations in production were determined largely by variation in yields. Among cereals, wheat production is relatively most constant. Corn production, however, varies widely.

During the last 10 years Hungarian wheat growers have enjoyed various forms of government aid, directed toward keeping domestic prices above the world market price. Since 1934 the Hungarian bread-grain policy, aided substantially by the export agreements with Italy and Austria, has in general been one of maintaining minimum prices. Government assistance was particularly successful in seed selection. It is estimated that in 1935 two-thirds of the total wheat acreage was sown with four types of improved seed. Greater stability of production in the future will depend largely on the program of reforestation of the Great Plain.

Some progress has been made in obtaining better crops of alfalfa, which is noted for its resistance to drought and frost, but the expansion has occurred largely at the expense of vetch. The total production of legumes, like that of fibers and

¹⁹ Michael, Louis G., "Agricultural survey of Europe Hungary," U. S. Department of Agriculture, Tech. Bul. 160, Jan. 1930; also *Wheat Studies of the Food Research Institute*, vol. 1 "The Danube Basin as a producer and exporter."

oilseeds, has remained virtually unchanged. Fiber and oilseed production meets only a small share of domestic needs. As already indicated, official recommendations for expanding acreages devoted to commercial crops have so far been largely unsuccessful.

TABLE 16.—*Production and yield of Hungarian grain crops, averages 1909-1913, 1928-1932, 1933-1937, 1935-1939; annual 1934 to 1939*

GRAIN	PRODUCTION					YIELD				
	WHEAT	CORN	RYE	BARLEY	OATS	WHEAT	CORN	RYE	BARLEY	OATS
	: 1,000 :	: 1,000 :	: 1,000 :	: 1,000 :	: 1,000 :	:	:	:	:	:
Average:	: bushels:	: bushels:	: bushels:	: bushels:	: bushels:	: Bushels:	: Bushels:	: Bushels:	: Bushels:	: Bushels:
1909-1913	71,490	60,810	31,380	32,370	28,460	19.3	27.7	19.5	24.5	33.5
1928-1932	79,108	73,303	28,896	28,889	21,770	19.9	24.4	18.3	25.5	34.3
1933-1937	81,070	84,071	28,625	29,001	19,225	20.7	29.5	18.0	25.2	35.2
1935-1939	¹ 85,737	¹ 92,832	¹ 28,191	¹ 28,656	¹ 18,775	22.2	31.4	18.6	25.7	35.5
1934	64,824	82,599	24,380	24,983	17,868	20.4	19.6	18.6	24.2	33.7
1935	84,224	55,837	28,650	25,557	16,941	21.8	36.3	17.5	26.0	34.1
1936	87,789	102,085	28,114	30,237	18,049	19.7	36.8	16.2	22.1	32.7
1937	72,158	108,606	24,325	25,579	18,629	24.7	36.1	20.3	29.7	38.6
1938	98,778	104,799	31,676	33,252	21,382	24.2	28.1	20.4	26.7	38.6
1939	112,767	88,612	35,310	35,847	24,576	17.1	29.7	15.4	21.2	32.4

¹ 1935-1938, four-year average since 1939 figures include crops in new territories.

Compiled from *International Yearbook of Agricultural Statistics*.

TABLE 17.—*Hungarian production of crops other than grains, average 1935-1938; annual 1933 to 1938*

CROP	AVERAGE 1935-1938	1933	1934	1935	1936	1937	1938
	: 1,000 tons:	: 1,000 tons:	: 1,000 tons:	: 1,000 tons:	: 1,000 tons:	: 1,000 tons:	: 1,000 tons:
Beans, dry	3.8	5.8	5.3	2.5	4.4	4.6	3.7
Lentils	9.2	9.5	7.7	8.9	8.8	10.1	9.1
Peas, dry	29.8	27.8	23.1	22.9	38.1	41.9	45.9
Total legumes	42.8	43.1	36.1	34.3	41.3	56.6	58.7
Hemp	9.8	7.4	7.2	5.7	10.2	11.2	12.2
Flax	1.6	1.6	1.3	1.1	1.9	1.8	1.7
Total fibers	11.4	9.0	8.5	6.8	12.1	13.0	13.9
Hempseed	4.6	2.2	2.3	3.2	5.3	5.4	4.7
Flaxseed	9.8	5.6	9.0	7.1	12.9	7.9	11.5
Rapeseed	9.5	8.0	9.1	11.5	7.4	6.5	12.6
Poppyseed	4.3	10.7	7.3	3.8	4.4	4.3	4.5
Sunflower seed	6.0	3.2	5.5	4.2	5.7	5.7	8.2
Linseed	7.4	5.6	8.7	7.1	6.7	5.8	9.8
Total oilseeds	41.6	35.3	41.9	37.0	42.4	35.6	51.3
Potatoes	2,196	1,906	2,170	1,422	2,519	2,637	2,205
Sugar beets	1,096	1,041	1,016	848	1,239	1,227	1,068
Tobacco	23.4	26.2	20.1	23.6	25.1	22.5	22.5

Compiled from *International Yearbook of Agricultural Statistics* and various official sources.

THE LIVESTOCK ECONOMY

Livestock and poultry play an important part in Hungarian agriculture, contributing nearly 30 percent to the total farm income in 1934-1935²⁰ and over 31 percent in 1936-1937.²¹ Rapid expansion in the livestock industry, however, is handicapped by the uncertainty of feed supplies. Before the World War, the feedstuff basis was guaranteed by the surpluses of districts later ceded to Rumania and Yugoslavia. The extreme variability of Hungarian corn yields constitutes an especially serious limiting factor. During the greater part of the post-war period there was also the difficulty of limited export opportunities for livestock and meat products. Even after the government succeeded in obtaining rather constant export outlets, however, the increase in livestock numbers was very slow.

The number of cattle on farms in Hungary, according to the spring census in 1938, was 1,882,000, as compared with 1,678,000 in 1934 and 1,819,000 in 1929. About 80 percent of the cattle in Hungary are now owned by small peasant farmers. Great efforts have been made to improve the quality of cattle by selecting better breeds and introducing more adequate feeding methods. The average annual milk yield per cow has been increased from 355 gallons in 1924 to 435 gallons in 1937. As a result, the total milk production of 400 million gallons now exceeds domestic needs, thus allowing for some butter exports. Ten years ago Hungary imported butter.

According to recent estimates, the number of hogs in Hungary in 1939 was 5.5 million. In addition there were about 300,000 hogs in the regions ceded to Hungary in November 1939.²² In line with the changed export demand, there has been a decided tendency to increase the number of lard-type hogs, the proportion of which in total hog numbers rose from 5.8 percent in 1924 to 17.5 percent in 1937.

Hungarian sheep numbers increased from a low of 1,087,000 head in 1934 to 1,629,000 in 1938. It is believed that the government policy of fixed domestic wool prices and of forcing the textile industry to take the entire domestic wool clip contributed largely to this expansion. Poultry represents an important source of income, particularly to the small peasants, furnishing about 6 percent of total farm income. Dead poultry and eggs also represent important export items.

AGRICULTURAL EXPORT TRADE

Agriculture contributes between 30 and 40 percent to the total national income of Hungary and industrially produced commodities about 52 percent.²³ Farm products, however, account for between 60 and 70 percent of the total export trade. Although in recent years the relative importance of agriculture in the total national

²⁰ De Siegescu, D., "Agricultural exports from Hungary during the years 1927-1937," *Monthly Bulletin of Agricultural Economics and Sociology*, Aug. 1938, p. 347E.

²¹ *Hungarian Economic Yearbook*, 1939, p. 82.

²² U. S. Department of Agriculture, Office of Foreign Agricultural Relations, Special Rept., "New Hungarian hog number estimates and feeding statistics," Belgrade, May 17, 1939.

²³ *Hungarian Economic Yearbook*, 1939, p. 21.

income has decreased, the status of farm products in the export trade shows no downward tendency (see table 18).

The amplitude of the annual fluctuations in agricultural exports depends largely on the current size of the crops rather than on export demand. The fact that farm products represent the greater part of all exports has determined Hungarian foreign trade policy, and has led to many difficulties during the post-World-War period, when some of the important former deficit countries embarked upon a policy of increasing their self-sufficiency in foodstuffs.

TABLE 18. *Hungarian exports by classes of products in percent of total value, 1934 to 1939*

YEAR	PLANT PRODUCTS	LIVESTOCK AND ANIMAL PRODUCTS	PROCESSED FARM PRODUCTS	TOTAL AGRICUL- TURAL EXPORTS	ALL OTHER EXPORTS
:	Percent	Percent	Percent	Percent	Percent
1934:	30.7	31.5	5.3	67.5	32.5
1935:	25.9	34.6	4.9	65.4	34.6
1936:	31.4	30.1	4.5	66.0	34.0
1937:	30.5	28.4	5.5	64.4	35.6
1938:	32.3	30.5	(1)	62.8	37.2
1939:	38.4	33.0	(1)	71.4	28.6

¹ Processed farm products, such as wine, canned meat, etc., are included in "Plant products" and "Livestock and animal products" for 1938 and 1939.

Hungarian Economic Yearbook, 1939 (data for 1934-1937); Bulletin Statistique Trimestriel Hongrois, 1939 (data for 1938-1939)

EXPORTS BY COUNTRY OF DESTINATION

Before the World War approximately 75 percent of the Hungarian farm surpluses found a free market in Austria, which in turn supplied 73 percent of the Hungarian import needs. During the first decade after the war, Hungarian foreign trade with the Succession States (Austria, Czechoslovakia, Rumania, and Yugoslavia) declined. In 1930, however, these countries still took 53.8 percent of the total exports and supplied 46.5 percent of Hungarian imports. Imports from Germany increased from 12.9 percent of the total in 1921 to 21.3 percent in 1930. During the world depression the direction of Hungarian trade changed relatively little. The share of Czechoslovakia decreased, but the shares of Austria, Germany, and Italy were well maintained.

As in the case of many other countries, foreign exchange difficulties forced Hungary to adopt a system of import regulations. In December 1932 the Hungarian Clearing Bureau for Agricultural Products and Foreign Trade was established for the purpose of arranging clearing agreements to facilitate exports. Since Hungary needed a number of raw materials that could not be supplied by the countries participating in the clearing system, efforts were also made to acquire freely convertible foreign exchange from Great Britain, Egypt, the United States, and Switzerland.


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Since 1934 trade connections with Germany have been greatly strengthened in spite of a number of difficulties - outstanding among them the fact that Hungarian manufacturing industries in many instances require the same type of raw materials needed by German manufacturers. Hungary depended to a large extent on Germany for these raw materials, in exchange for Hungarian farm products. As a result of the German rearmament program, however, Hungary found it impossible to obtain from Germany its usual supplies of pig iron, cellulose, and other raw materials. Nevertheless, Germany's share in total Hungarian exports increased from 11.4 percent in 1933 to 22.2 percent in 1934.

Exports to Austria and Germany together declined gradually from 46.6 percent of the total in 1934 to 41.0 percent in 1937. After the inclusion of Austria in the Reich, however, and the intensification of the German trade drive into southeastern Europe, Hungarian exports to the Greater Reich increased to 45.7 percent of the total in 1938 and to 50.1 percent in 1939. Czechoslovakia's share, which in 1929 was 16.4 percent as compared with Germany's 11.6 percent fell abruptly to less than 5 percent in 1934 and dwindled to 1.6 percent in 1939.

Italy, bound to Hungary and Austria politically as well as economically through the Rome agreement of 1934, noticeably improved its position in Hungarian trade. Its share was increased from 7 percent in 1929 to 8.3 percent in 1934 and to about 13 percent in 1935-1937. Although declining slightly in 1938, Hungarian exports to Italy increased to 15.5 percent in 1939.

The share of the Danubian countries in Hungarian trade has remained comparatively constant, at a little less than 10 percent of the total. Switzerland was also a steady customer, taking about 4 percent of all exports. The various European countries now under German domination bought regularly certain crop specialties that they are bound to need increasingly during the next few years. Until 1938 Great Britain maintained its share of about 8 percent. In 1939 transportation difficulties led to a sharp reduction in these exports, and trade with Great Britain has now entirely ceased.

Since two-thirds of the total Hungarian exports in recent years have been directed to Greater Germany (including Czechoslovakia) and Italy, and since the other Danubian countries and Switzerland have also enjoyed close trade relations, no marked changes in the geographic distribution of Hungarian exports may be expected, except for a diversion to the Axis powers of the share formerly taken by Great Britain.

#### THE COMPOSITION OF FARM EXPORTS

Wheat and live animals are the outstanding Hungarian farm exports accounting in recent years for about 30 percent of the total exports and about 50 percent of the agricultural exports. Various measures have been adopted by the Hungarian Government to stimulate wheat exports. A grain certificate system coupled with outright export subsidies was in operation from 1930 to 1934. Exports were monopolized by an export syndicate, which also supervised a minimum-price guarantee introduced after the Rome

agreement of 1934. That agreement provided for wheat export quotas to Austria and Italy. Trade agreements with Germany, Switzerland, and several other countries also greatly improved the grain export position.

The magnitude of the annual wheat exports depends entirely on the size of the current crop. As a result the exports of wheat show sharp variations from year to year, ranging from 14.8 million bushels in 1935 to 40.6 million in 1939. Nevertheless, wheat exports represent relatively the most constant surpluses in the entire farm economy.

TABLE 19.—Principal Hungarian farm exports (net), averages 1928-1932, 1935-1939; annual 1934 to 1939

| COMMODITY         | AVERAGE<br>1928-1932   | 1934                   | 1935                   | 1936                   | 1937                   | 1938                   | 1939                   | AVERAGE<br>1935-1939   |
|-------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
|                   | Million :<br>bushels : | Million :<br>bushels : | Million :<br>bushels : | Million :<br>bushels : | Million :<br>bushels : | Million :<br>bushels : | Million :<br>bushels : | Million :<br>bushels : |
| Wheat .....       | 11.9 :                 | 16.8 :                 | 12.2 :                 | 21.0 :                 | 13.2 :                 | 16.0 :                 | 37.0 :                 | 19.9                   |
| Flour .....       | 8.9 :                  | 2.4 :                  | 2.6 :                  | 2.6 :                  | 2.8 :                  | 1.7 :                  | 3.6 :                  | 2.7                    |
| Total wheat ..    | 20.8 :                 | 19.2 :                 | 14.8 :                 | 23.6 :                 | 16.0 :                 | 17.7 :                 | 40.6 :                 | 22.5                   |
| Corn .....        | .4 :                   | 1.1 :                  | 9.8 :                  | 8.4 :                  | 7.5 :                  | 4.3 :                  | 1.9 :                  | .9                     |
| Rye .....         | 3.6 :                  | 3.5 :                  | 8 :                    | 1.7 :                  | 4.3 :                  | 2.4 :                  | .7 :                   | 2.0                    |
| Barley .....      | 1.8 :                  | .6 :                   | 3 :                    | .6 :                   | .8 :                   | .2 :                   | 4 :                    | .3                     |
| Oats .....        | .6 :                   | .6 :                   | - :                    | .6 :                   | .2 :                   | - :                    | - :                    | -                      |
| Beans, dry ..     | .3 :                   | .7 :                   | 3 :                    | 4 :                    | 1.1 :                  | .6 :                   | 4 :                    | .6                     |
| Peas, dry ..      | - :                    | .4 :                   | 3 :                    | 5 :                    | .6 :                   | .6 :                   | 6 :                    | 5                      |
|                   | Thousand :<br>tons :   | Thousand :<br>tons :   | Thousand :<br>tons :   | Thousand :<br>tons :   | Thousand :<br>tons :   | Thousand :<br>tons :   | Thousand :<br>tons :   | Thousand :<br>tons :   |
| Malt .....        | - :                    | 28 :                   | 37 :                   | 37 :                   | 44 :                   | 33 :                   | 49 :                   | 40                     |
| Oilseeds ..       | - :                    | 18 :                   | 23 :                   | 18 :                   | 18 :                   | 18 :                   | 14 :                   | 18                     |
| Clover seed ..    | - :                    | 8 :                    | 10 :                   | 15 :                   | 17 :                   | 13 :                   | 11 :                   | 13                     |
| Vegetables ..     | - :                    | 39 :                   | 23 :                   | 50 :                   | 41 :                   | 35 :                   | 33 :                   | 36                     |
| Fruit, fresh ..   | - :                    | 32 :                   | 20 :                   | 64 :                   | 43 :                   | 34 :                   | 64 :                   | 45                     |
| Tobacco .....     | 9 :                    | 11 :                   | 9 :                    | 9 :                    | 8 :                    | 6 :                    | 11 :                   | 9                      |
| Meat, fresh ..    | - :                    | 2 :                    | 17 :                   | 15 :                   | 4 :                    | 8 :                    | 9 :                    | 11                     |
| Poultry .....     | - :                    | 30 :                   | 28 :                   | 23 :                   | 29 :                   | 28 :                   | 22 :                   | 26                     |
| Lard and bacon .. | - :                    | 14 :                   | 26 :                   | 21 :                   | 23 :                   | 21 :                   | 15 :                   | 21                     |
| Butter .....      | 1 :                    | 4 :                    | 3 :                    | 6 :                    | 7 :                    | 4 :                    | 1 :                    | 4                      |
| Eggs .....        | 11 :                   | 11 :                   | 9 :                    | 8 :                    | 12 :                   | 15 :                   | 11 :                   | 11                     |
|                   | Thousands :            | Thousands :            | Thousands :            | Thousands :            | Thousands :            | Thousands :            | Thousands :            | Thousands :            |
| Live cattle ..    | 94 :                   | 70 :                   | 70 :                   | 77 :                   | 108 :                  | 55 :                   | 75 :                   | 77                     |
| Live hogs ..      | 169 :                  | 126 :                  | 183 :                  | 175 :                  | 165 :                  | 229 :                  | 382 :                  | 227                    |
| Live sheep ..     | - :                    | 40 :                   | 36 :                   | 36 :                   | 44 :                   | 24 :                   | 20 :                   | 32                     |

Compiled from official sources

Exports of other grains are insignificant, except in years of unusually favorable harvests. Rye surpluses, averaging 3.6 million bushels annually during 1928-1932, were reduced by almost 50 percent during 1935-1939, largely because of the small exports of 1935 and 1939. In the case of corn, the extreme variations in yield result

in corresponding fluctuations in the level of exports. In years of low yield Hungary must import considerable quantities of corn. During 1935-1939 net corn imports averaged about 1 million bushels a year. During 1928-1932 average annual exports amounted to 400,000 bushels.

On the whole, livestock exports have been well maintained. A decided tendency toward increased exports of live hogs is evident, but live cattle exports have declined. Exports of animal products, such as meat, lard, butter, dead poultry, and eggs, show considerable variation. Exports of fresh meat are small and have declined, whereas those of lard, poultry, and eggs have been rather stable. Butter exports increased slightly until 1937, but have been only nominal in recent years. Fruit and vegetable exports vary widely in accordance with annual yields, and no definite tendency is apparent.

#### GEOGRAPHIC DISTRIBUTION OF FARM EXPORTS

The importance of Germany as a market for Hungarian agricultural surpluses has increased sharply in recent years. In 1937, before the annexation of Austria Germany purchased 29.9 percent of total Hungarian farm exports. At that time Austria's share amounted to 23.1 percent, so that Germany and Austria together took 53 percent of the total.

As an immediate result of the annexation of Austria a new trade agreement between Hungary and Germany was signed on May 7, 1938, providing for higher quotas on imports of the more important Hungarian farm products. The intensification of Hungarian dependence on Greater Germany increased Germany's share of total Hungarian farm exports to 62 percent in 1938. Greater Germany and Italy together received almost three-fourths of all Hungarian agricultural surpluses.

Germany proper became interested in the Hungarian wheat surpluses only after 1938, but Greater Germany and Italy absorbed together nearly three-fourths of total Hungarian wheat exports during 1935-1939. Italy alone took 60 percent in 1939. Switzerland was the only other important customer, taking 14.4 percent in 1935-1939. Greece purchased Hungarian wheat only occasionally, as in 1937 and 1939, when its purchases amounted to about 6 percent of the total. No major shifts in wheat export markets appear likely during the next few years.

The small surplus of rye was exported almost entirely to Greater Germany and Italy. Corn exports are very irregular. In the frequent years of low yield, as in 1935, 1936, and 1939, Hungary depends largely on imports from Rumania and Yugoslavia. In good crop years the Scandinavian countries were important purchasers; in 1937, for example, their share of Hungarian corn exports amounted to over 50 percent of the total. In 1939, however, the total net surplus of 50,000 short tons was exported to Greater Germany. The small exports of barley go to Italy, Belgium, and Switzerland, which countries also take the surpluses of dry beans. About half the exports of dry peas are normally purchased by Germany. Great Britain's share of about 30 percent will now be available to either Germany or Italy.

Hungary is on a net import basis for oleaginous raw materials. Since the former imports of linseed and copra are now threatened, it is unlikely that even the insignificant oilseed exports of 1935-1939 can be maintained, the greater part of which was shipped to Greater Germany and Italy. Most of the Hungarian surpluses of fresh fruits have been taken regularly by Greater Germany. Switzerland and former Poland bought 9.8 and 7.3 percent, respectively, from 1935 to 1939.

Before 1938 Italy was the principal foreign market for Hungarian live cattle, but in 1938 and 1939 was exceeded by Greater Germany. The two countries have been virtually the only foreign markets since 1935. Much more important is the volume of live hog exports, for which former Austria and Czechoslovakia were the traditional markets. Greater Germany, therefore, absorbs the entire surplus. Until 1938 Great Britain imported between one-third and one-half the total poultry exports, the remainder going to Greater Germany. Italy entered the market in 1939, and during the next few years it may take the share formerly going to Britain. Most of the exports of lard, bacon, and eggs go to Greater Germany.

The future geographic distribution of Hungarian farm exports is expected to resemble that of 1938 and 1939, but with Germany predominating more than ever, since all of Hungary's former customers except Switzerland and perhaps Italy are now under German domination or cut off entirely. Only Great Britain's former share of the export trade (5.7 percent in 1937 and 6.9 percent in 1938) will be available to continental European importers in addition to their previous takings.

#### POTENTIAL FARM SURPLUSES DURING AND AFTER 1940-41

So far Hungarian export surpluses have probably been less affected by the war than have those of Rumania. Shortages of certain products essential to the Hungarian farm economy, especially of fertilizers and fuel, were evident immediately after the outbreak of war. Hungary regularly imported phosphates from French Africa and the United States. Since the use of such fertilizers increases plant resistance against climatic changes typical of Hungary, continued shortages are likely to affect adversely the quantity and quality of the crops and the export surpluses. Transportation difficulties and shortage of coal may also reduce the level of current farm production and exports.

#### THE 1940-41 OUTLOOK

At the time of the winter and spring sowings for the 1940 crop, the farm-labor shortage in Hungary resulting from partial mobilization appears to have been less acute than that in Rumania. The labor shortage was intensified at harvest time because of increased mobilization preceding the Hungarian demand for Transylvania, which was subsequently ceded by Rumania. These and the other factors previously mentioned, however, were of minor importance compared with the adverse effects of weather conditions on the size of the 1940-41 crops and, consequently, on the current export surpluses.



The unusually severe winter and extensive spring floods seriously damaged most of the Hungarian crops and jeopardized the potential surpluses of livestock products. In 1940, according to recent reliable estimates, the acreage of all cereals except corn was about 20 percent below that of 1939. The Hungarian Ministry of Agriculture stated early in May that serious frost and flood damage to winter seedings and retarded spring sowings necessitated shifts from bread cereals and barley and oats to corn.<sup>24</sup> Information recently received indicated that much of the wheat crop had lodged and that some rust had developed.

Reports indicate that the 1940 wheat crop was less than 80 percent of the 1939 crop. The total 1940-41 crop, including that of the new territories, is estimated at about 75 million bushels.<sup>25</sup> The 1939 Hungarian crop, excluding the crops of the new territories, amounted to 112.8 million bushels, as compared with the average of 85.4 million during 1935-1938 for Hungary as then constituted.

The 1940 rye crop probably did not exceed 30 million bushels, as compared with 35.3 million in 1939 - a decline of about 15 percent. The 1940 crop, however, in spite of increased area, will about equal the 1935-1938 average.

In view of the feed shortage prevailing as a result of the poor 1939 corn harvest, the Hungarian Government has ordered a sharp reduction in the milling ratio for bread grains in order to obtain larger supplies of bran. The milling ratio for wheat cannot exceed 75 percent, and that for rye 70 percent. The reduction ordered may increase domestic bread-grain needs by about 10 percent. In addition, army requirements have resulted in an increase in domestic consumption of bread grain. In view of these factors, no substantial exports of bread grains may be expected during the 1940-41 marketing season, even with pressure from outside of Hungary.

The 1940 barley crop was very poor. According to the International Institute of Agriculture, from 40 to 70 percent of the area of winter barley had to be plowed under.<sup>26</sup> The total 1940-41 crop is estimated at about 32 million bushels,<sup>27</sup> which represents a reduction of about 10 percent compared with the 1939 crop but only a slight reduction compared with the 1935-1938 average. Even the larger crops of the last decade provided only insignificant export surpluses. During 1935-1939 barley exports averaged 300,000 bushels annually; however, the 1940 crop will not meet domestic requirements. Reports indicate that winter oats suffered great damage. There were no exports of oats in 1938 and 1939, and no surpluses may be expected in 1940-41.

The 1940 corn crop may reach 110 million bushels, as compared with 89 million in 1939 and the 1935-1938 average of 93 million for Hungary as then constituted. Low corn yields in 1939 necessitated imports from neighboring Danubian countries. Exports are hardly possible in 1940-41 in view of the poor clover and alfalfa crops.

<sup>24</sup> *Internationaler Getreidemarkt*, May 18, 1940.

<sup>25</sup> International Institute of Agriculture, *Monthly Crop Report and Agricultural Statistics*, Sept. 1940

<sup>26</sup> *Ibid.*, May 1940.

<sup>27</sup> *Ibid.*, Sept. 1940.

Reports indicate that pastures had to be used prematurely because of a lack of fodder supplies, with a consequent deterioration of pasture conditions.

Exports of oilseeds were prohibited by the government as soon as it became apparent that the British blockade would cut off the usual imports of copra, whale oil, and other fats and oils. In order to increase the domestic supply of edible oils, a decree was issued compelling all corn producers to plant soybeans on the borders of their corn fields. A 1940 soybean area of 14,200 acres, as compared with 5,750 in 1939, was expected as a result of that measure, but no information is available as to developments or crop yields. A large part of the winter rapeseed crop was destroyed by frost and the weight of the snow, and the spring crop was retarded by cold and wet weather. It is believed unlikely that Hungarian oilseed crops in 1940 will be large enough to offset the loss of former imports.

Prospects for the 1940 fruit crops are far from promising. According to reliable reports, vineyards and fruit trees were greatly damaged by frost. It is estimated that from 80 to 100 percent of the peach trees, 70 percent of the cherry trees, and 30 to 40 percent of the apricot trees were destroyed.

The livestock industry was faced with serious difficulties following the short corn crop of 1939, and the severe winter and late spring intensified the shortages. The government attempted to remedy the situation by importing corn from Rumania. Indications are that hog numbers have been reduced during the past few months because of the feed shortage;<sup>28</sup> moreover, large numbers of hogs and other animals were killed by floods. Despite the introduction of meatless days, the domestic consumption of meat has increased as a result of greater industrial activity. All these factors will undoubtedly influence the level of potential livestock and meat exports during 1940-41. It is also feared that a new epidemic of hoof-and-mouth disease (which prevailed in 1938 and into 1939) may break out. In any case, it is certain that the 1940-41 surpluses of live animals, as well as of animal products, will fall far short of the 1939 exports.

#### THE OUTLOOK FOR THE NEXT FEW YEARS

The most urgent problem facing the Hungarian farm economy is that of improving the status of landless farm workers and peasants. This is possible only by a more rigid land reform or by transfer of large numbers to nonagricultural industries - measures not to be expected in the near future. In the meantime no significant shifts in the pattern of farm production may be anticipated.

No attempt has been made to appraise the effects on future farm production and surpluses of the proposed land reform, reforestation program, and various other contemplated measures. Should these measures be adopted, however, it is quite possible that the new leaseholds, aided by the cooperatives, would eventually considerably increase the total production of animal products and of fibers and oilseeds. In view

<sup>28</sup> Weekly Economic Report for May 4, 1940 from the American Consulate in Budapest, Hungary.

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of the prevailing political situation, however, it is not likely that the reform measures will be made effective in the near future. Only minor changes may be anticipated during the next few years. The volume of export surpluses, therefore, will depend largely on current crop conditions and the effect of the war on the availability of farm labor, fertilizer supplies, and transportation facilities.

YUGOSLAVIA

Yugoslavia²⁹ is predominantly an agricultural country. According to the latest official census (in 1921) 78.9 percent of the gainfully occupied population was engaged in agriculture, 9.9 percent in industry, 2.6 percent in commerce, 1.7 percent in transportation, and 2.9 percent in public service and the professions. The occupational distribution has not changed significantly since that time. More recent unofficial estimates indicate that of the total population of 15.6 million, 81 percent is engaged in farming,³⁰ and the total number of farm holdings is estimated at 1,986,000. The average farm must provide food and shelter for 5.3 persons.

The efficiency of the Yugoslav farm economy varies sharply from region to region. In northern Yugoslavia farming methods are generally similar to those of Hungary, whereas in the remainder of the country they are about as primitive as in most parts of Rumania. Although Yugoslavia regularly produces surpluses of wheat, corn, livestock, and livestock products, it is not probable that production can be expanded rapidly enough in the near future to make any significant contribution toward offsetting the shortages of farm products in the deficit regions of Europe.

THE AGRICULTURAL PROBLEM IN YUGOSLAVIA

The Yugoslavian farm problem is one of providing sufficient agricultural land for the large and increasing farm population. About 42 percent of the total area consists of forests and unproductive land; and all of the country except the north-eastern section, which is a part of the Great Danubian Plain, is mountainous. Of the total area of 62 million acres, only 11.7 million, or less than one-fifth, are suitable for intensive agriculture. In 1938, 24.2 million acres of mountainous and poor land were utilized for farming purposes. A total agricultural area of 36 million acres, of which more than two-thirds is land of inferior quality, must furnish a livelihood for 10.6 million peasants and about 2 million landless farm workers.

It is estimated that under present farming conditions in Yugoslavia at least 25 acres are needed to provide adequate subsistence for one family. At present, however, only 10 percent of the holdings are farms of more than 25 acres. These

²⁹ See Von Franges, O., *Die sozialökonomische Struktur der Jugoslawischen Landwirtschaft* (The Social and Economic Structure of Yugoslavian Agriculture), Berlin, 1937; *Wirtschafts-Enzyklopädie des Balkans*, "Die wirtschaftliche Lage der Balkanländer." The Economic Situation of the Balkans vol. I, Belgrade, 1938; U. S. Department of State, Consular Report, "Agrarian reforms in Yugoslavia, 1919-1940," Belgrade, March 14, 1940.

³⁰ Von Franges, O., "Changes in the export of agricultural products from Yugoslavia," *Monthly Bulletin of Agricultural Economics and Sociology*, Jan. 1939.

larger holdings account for 45 percent of the total agricultural land. The holdings of the remaining 90 percent of the farm population average about 8 acres, of which, as a rule, only 5 acres are arable. Despite the land reform measures initiated in 1920, the uneconomical size of most Yugoslavian farm holdings remains the most serious obstacle in the way of a permanent improvement in agricultural conditions.

Yugoslavia was formed after the World War out of part of the former Austro-Hungarian Empire and all of the former Kingdoms of Montenegro and Serbia. Land distribution and farming conditions varied greatly in these regions. "Old Serbia" was a typical peasant country, with no large estates, whereas the former Turkish provinces of southern Serbia, as well as former Bosnia, Hercegovina, and Dalmatia, had preserved a feudal system in which the status of the peasants bordered on serfdom.

Although the agrarian reform measures initiated in 1920 abolished feudal relations in Yugoslavia, large-scale redistribution of land in southern Yugoslavia could not be effected, since most of the peasantry there had always operated small farms, though in a vassal relationship to their overlords. About 2.5 million acres were distributed among 250,000 families of former serfs as a result of the land reforms. The peasants, however, continued to live on the same small holdings as before, and made no changes in their primitive farming methods.

In the northern part of the country, comprising Slovenia, Croatia-Slavonia, and Voivodina, the situation was different. There the peasants had been freed in 1848. In contrast with the situation in southern Yugoslavia, only a small percentage of the total area represented peasant holdings. About 750 large estates, operated largely by farm workers, as in Hungary, comprised 2.7 million acres of land. In northern Yugoslavia as a result of the land reform measures 1.9 million acres formerly belonging to these estates have been distributed to 275,000 families of former farm workers and war veterans.

Altogether the agrarian reform redistributed 5.7 million acres, or 13 percent of the total productive area, among 765,000 families. The effect on farm practices and the level of production was slight, since most of the peasants continued to use primitive farming methods. In the north some retrogression in farm production may have resulted, but on the whole farming conditions there are still far superior to those in the southern section of Yugoslavia.

Southern Yugoslavia produces few farm surpluses; most of the small farms there are hardly able to produce enough for their own needs. The southern part of old Serbia, south Serbia, central Bosnia and Croatia, Dalmatia, Hercegovina, and Montenegro must import supplies from the north. The northern districts are virtually the only regions capable of producing crops for export. It is significant that illiteracy among the peasants increases progressively from less than 10 percent in the north to over 70 percent in the southern provinces. The few remaining large estates - maintained largely to produce high-quality seeds and improved breeds of livestock - use tractors and steam plows, and practice advanced methods of moisture conservation. In the north, iron plows are in general use even on peasant farms.

Nearly half the farmers in Yugoslavia are members of cooperative societies. The peasant cooperatives have been active in providing farm implements. The agricultural depression in 1929 interrupted this activity and led to a general deterioration of farming practices in the southern parts of the Kingdom.

As in Rumania, a serious obstacle to increased efficiency is the peasant's adherence to traditional customs and practices. In Slavonia, for instance, only 20 percent of the available working days are utilized for farm work. In Serbia there are 120 official and 80 unofficial holidays, so that only 160 working days remain.

Yugoslavia cannot solve the problem of its surplus agricultural population by land distribution alone, since there are few large estates left to divide. Moreover, most peasant holdings are already too small to provide even a meager subsistence. It is believed that farmers' conditions can be improved only by a slow process of agricultural intensification, which will require many years of education.

THE AGRICULTURAL PATTERN OF YUGOSLAVIA

Only about 20 percent of the total area of Yugoslavia consists of level land suitable for farming. The best of this land is located in the north and east, where 70 percent of the area is arable. Except in some valleys, soils in other sections of Yugoslavia are relatively unproductive. In the southwest the *Karst*, covering about a fourth of the country, is predominantly barren, lacking surface water and to a large extent surface soil. In this region only from 10 to 20 percent of the land is arable.

Since the southern provinces produce very little for export, only the northern region will be considered here. The land of northern Yugoslavia consists largely of fertile prairie soil. The valleys are ordinarily protected from inundation by the dams on the Danube and Tisa rivers; but severe floods occasionally cause serious damage, as in 1927, when the Danube flooded 750,000 acres of land seeded to winter cereals.

Only spring crops like corn, dry beans, and hemp can be grown in northeastern Yugoslavia. The northern plain is open to the cold winds of the Alps and the Carpathian Mountains, and severe cold weather is frequent. The most serious handicap to production is the prevalence of cold northerly winds, which blow away the protective snow blanket and result in widespread damage, which usually cannot be offset by increased spring sowing. The summer temperature is excessively high, with little precipitation. The distribution of rain is usually favorable, however, since the greatest rainfall is in May and June. The months of July and August are very dry, resulting in premature ripening of cereals.

CROP PRODUCTION

As in Rumania and Hungary, grain crops are most important, accounting for by far the largest part of the cultivated land. In 1938, 15.2 million acres, or 82.2

percent. were planted to grains of a total arable area of 18.5 million acres. In some northern districts the proportion of grains was over 90 percent. Corn is the most important single crop, accounting for about 37 percent of the arable land followed by wheat with 29.3 percent.

Of other food crops occupying 1.1 million acres (5.7 percent of the arable land) in 1938, potatoes alone accounted for 667,000 acres and legumes for 94,000. In the same year, of 455,000 acres, or 2.5 percent, devoted to industrial crops, over 40 percent was planted to fiber crops, chiefly hemp. Oilseeds occupied 129,000 acres and sugar beets and tobacco 72,000 and 42,000, respectively.

Since the peasants are traditionally familiar with the cultivation of wheat and corn the acreage of both crops has tended to increase throughout the post-World-War period. During the recent depression, when cereal prices dropped rapidly, expansion of wheat and corn acreage appeared to the peasants the only means by which they could maintain their already low income. Between 1924 and 1934 wheat acreage increased from 4,423,000 to 5,002,000 acres, or by 13.1 percent. The expansion in corn acreage was even more pronounced, increasing from 4,924,000 acres in 1924 to 6,565,000 in 1934 - an increase of 32.8 percent. Since 1934 no clear-cut tendency has been apparent. Production of both wheat and corn has merely shown rather wide annual fluctuations, caused largely by the peculiar climatic conditions of Yugoslavia.

Barley and oats are grown only to meet the domestic bread- and feed-grain requirements. The rye acreage is limited to local needs in districts inhabited by Germans. None of these grains is important in the export trade.

As in Rumania and Hungary, crop yields vary widely from year to year. The instability of the wheat yield is 50 percent higher than in Hungary and nearly as high as that of Rumania. The average deviation from the mean yield between 1930 and 1939 amounted to 16.2 percent, as compared with 11.5 percent in Hungary. During this period the maximum fluctuation ranged from 11.1 bushels per acre in 1932 to 21.2 in 1938, the highest yield being nearly double the lowest.

The variability of the corn yield is equal to that of wheat, the average deviation from the mean being also 16.2 percent between 1930 and 1939. The volume of production of wheat and corn is largely determined by yields. The wheat crop fluctuated between 53.4 million bushels in 1932 and 111.3 million in 1938. The fluctuation in corn production is even more pronounced; the maximum crop of 210 million bushels in 1937 was nearly 3 times the minimum crop of 72 million in 1928.

Thus far Yugoslavian agricultural policy has favored cereal crops. Since 1930 the government has regulated wheat prices through the *Prizad* (The Privileged Export Company) - a joint stock company which purchases all wheat offered by farmers at prices well above current world market prices and attempts to find export outlets. Gradually similar subsidies have been introduced for other farm products. Since 1938 provisions have been made to establish the necessary storage facilities for cereals, fruits, eggs and other commodities. These plans are to be carried out by a new corporation known as "Silos Inc.," working with the cooperatives.

Although the importance of grains has not decreased, there has been a tendency toward increased production of industrial crops. However, the expansion in fiber crops, oilseeds, tobacco, and sugar beets has been slight so far, and has not noticeably affected the general farm situation.

Among the fibers, hemp is most important. Since 1931, when 93,000 acres were planted, hemp acreage has increased gradually to 143,000. Between 1928-1932 and 1935-1938, production was doubled, rising from 26,600 to 53,700 short tons. Most of the increase occurred between 1933 and 1936, and little expansion has taken place since then. During the same period cotton production also increased, but the total crop is still insignificant, amounting in 1939 to 1,200 short tons as compared with 1,300 in 1938 and only 300 in 1933-1937. Present production meets only about 5 percent of the domestic needs. Imports of cotton in 1938 amounted to 21,600 short tons, and imports of cotton yarns and textiles are also needed.

The acreage in legumes has remained unchanged during the last decade. The production of dry beans, which are of exceptionally high quality, usually exceeds domestic requirements; however, annual fluctuations in this crop are pronounced.

Oleaginous plants probably offer the best prospects for the future and should take an important place in a more intensive agriculture. Before 1938 the total production of oilseeds was insufficient to meet domestic needs, which are estimated at about 50,000 tons. In 1938 production for the first time about equaled these needs. The government has strongly urged a shift toward oleaginous plants, and since 1933 a continuous increase in production has been observed. The Yugoslav vegetable oil industry is obliged to purchase domestic seeds, prices for which are fixed by the government agency *Uljarica*. Since 1934 the cultivation of soybeans has been promoted by this company, though it has proceeded slowly to allow producers to become familiar with the requirements of soybean culture. About half the crop is used as feed.

Tobacco is produced in the regions of low rainfall. For many years the Yugoslavian Tobacco Monopoly has maintained control over production and marketing. During the depression the tobacco acreage was reduced from 54,400 acres in 1932 to 18,200 in 1934. By 1937, when the area planted amounted to 47,700 acres, most of this reduction had been recovered. Neither the 1938 area of 36,800 acres nor the 1939 area of 39,500, however, approached the 1937 level.

Indications are that the government desires to bring about an expansion of tobacco production. A decree of the Ministry of Finance on June 16, 1939, provided for a standardization of tobacco production and announced that only varieties approved by the Monopoly could be grown. The necessary seed is produced on experimental fields operated by the Monopoly. The National Tobacco Monopoly, created at the same time, promotes improved cultural practices and attempts to develop export outlets. Domestic consumption requires approximately 20 million pounds per year or about 50 percent of the present crop.³¹

³¹ U. S. Department of Agriculture, Office of Foreign Agricultural Relations, Special Rept. No. 389, "The oriental tobacco situation, as of October 1, 1939," Belgrade, Oct. 20, 1939.

TABLE 20.-Acreage, production, and yield of Yugoslav grain crops, averages 1928-1932, 1933-1937, 1935-1939; annual 1933 to 1939

GRAIN	AVERAGES			1933	1934	1935	1936	1937	1938	1939
	1928-1932	1933-1937	1935-1939							
ACREAGE	1,000 : acres	1,000 : acres	1,000 : acres	1,000 : acres	1,000 : acres	1,000 : acres	1,000 : acres	1,000 : acres	1,000 : acres	1,000 : acres
Wheat	5,051:	5,235:	5,377:	5,137:	5,002:	5,313:	5,462:	5,262:	5,262:	5,584
Corn	5,760:	6,455:	6,563:	6,272:	6,565:	6,109:	6,683:	6,649:	6,801:	6,575
Rye	581:	625:	634:	633:	613:	623:	628:	628:	640:	650
Barley	1,033:	1,045:	1,039:	1,059:	1,042:	1,044:	1,051:	1,030:	1,026:	1,045
Oats	924:	902:	898:	929:	916:	919:	890:	854:	917:	910
YIELD PER ACRE	Bush- : els	Bush- : els	Bush- : els	Bush- : els	Bush- : els	Bush- : els	Bush- : els	Bush- : els	Bush- : els	Bush- : els
Wheat	17.1:	16.5:	17.9:	18.8:	13.7:	13.8:	19.7:	16.4:	21.2:	18.7
Corn	23.8:	27.2:	26.4:	22.5:	30.9:	19.5:	30.5:	31.6:	27.5:	22.1
Rye	13.6:	13.2:	13.4:	15.3:	12.5:	12.4:	12.7:	13.1:	14.0:	14.7
Barley	17.7:	18.1:	17.9:	20.1:	18.1:	16.5:	18.5:	17.1:	18.9:	18.6
Oats	22.9:	24.6:	24.2:	27.5:	25.1:	20.8:	25.8:	23.8:	24.5:	26.3
PRODUCTION	1,000 : bushels	1,000 : bushels	1,000 : bushels	1,000 : bushels	1,000 : bushels	1,000 : bushels	1,000 : bushels	1,000 : bushels	1,000 : bushels	1,000 : bushels
Wheat	86,170:	86,334:	96,516:	96,582:	68,328:	73,100:	107,422:	86,238:	111,330:	104,488
Corn	137,217:	175,400:	173,178:	140,861:	202,909:	119,222:	203,946:	210,061:	187,229:	145,432
Rye	7,913:	8,262:	8,498:	9,659:	7,688:	7,719:	8,002:	8,243:	8,941:	9,587
Barley	18,317:	18,872:	18,618:	21,267:	18,828:	17,248:	19,421:	17,596:	19,348:	19,477
Oats	21,164:	22,195:	21,765:	25,563:	22,971:	19,144:	22,942:	20,355:	22,495:	23,891

International Yearbook of Agricultural Statistics and various official sources.

TABLE 21.-Yugoslav production of crops other than grains, averages 1928-1932, 1933-1937, 1935-1939; annual 1933 to 1939

CROP	AVERAGES			1933	1934	1935	1936	1937	1938	1939
	1928-1932	1933-1937	1935-1939							
Food crops:	1,000 : bushels	1,000 : bushels	1,000 : bushels	1,000 : bushels	1,000 : bushels	1,000 : bushels	1,000 : bushels	1,000 : bushels	1,000 : bushels	1,000 : bushels
Beans, dry	18.3:	29.8:	33.0:	9.4:	37.3:	29.5:	33.7:	39.2:	29.7:	
Potatoes	-	1,727 ¹	1,724	1,602	2,009	1,479	1,779	1,764	1,874	
Hemp	26.6:	45.2:	53.7:	30.8:	41.4:	41.3:	57.3:	55.0:	61.1:	
Flax	-	11.8:	12.7:	10.9:	11.6:	11.1:	13.2:	12.2:	14.2:	
Cotton	1:	.3:	.8:	1:	.2:	.2:	.4:	.8:	1.3:	1.2
Oilseeds	-	-	-	-	-	-	-	-	-	
Hempseed	1.4:	2.7:	3.3:	1.7:	2.1:	2.3:	2.6:	5.0:	3.3:	
Cottonseed	2:	.7:	1.8:	.2:	.4:	.4:	1.0:	1.7:	3.2:	2.6
Rapeseed	5.7:	10.4:	12.3:	3.1:	6.0:	11.1:	23.1:	9.0:	9.9:	8.6
Poppyseed	-	5.3:	4.4:	3.1:	6.0:	11.2:	2.9:	3.3:	2.0:	2.5
Soybeans	-	.9:	3.6:	-	.8:	1.1:	.7:	1.7:	4.2:	10.1
Sunflower seed	-	6.7:	15.2:	-	4.4:	2.7:	7.7:	18.8:	31.7:	-
Total	-	-	-	81:	19.7:	28.6:	38.0:	39.5:	54.3:	
Fruits:	-	-	-	-	-	-	-	-	-	
Olives	-	-	29.9:	-	-	18.4:	14.3:	53.2:	33.8:	
Plums	-	456.4:	360.8:	494.2:	482.6:	381.2:	687.8:	236.4:	333.7:	1,650
Apples	-	123.9:	129.7:	84.5:	135.9:	153.6:	125.1:	120.4:	129.5:	120
Peaches	-	20.3:	30.9:	-	17.3:	7.9:	38.6:	37.6:	30.8:	40
Pears	-	61.9:	48.6:	58.9:	88.1:	34.8:	80.5:	47.2:	31.7:	
Cherries	-	21.8:	24.0:	-	37.5:	16.5:	30.0:	24.9:	24.7:	-
Tobacco	14.1:	13.5:	18.1:	9.7:	6.6:	10.1:	18.3:	22.9:	16.2:	22.9

¹ 4 year average.² 5 year average.

International Yearbook of Agricultural Statistics and various official sources.

In years of good crops there are large surpluses of plums and apples. Plums, however, show extremely variable yields. During 1933 to 1939, for example, the smallest plum crop - that of 1937 - was only 236,000 tons, compared with a record crop in 1939 of 1,650,000, or 7 times the 1937 production. Prunes are used in Yugoslavia chiefly for the distillation of a brandy known as *Slivovic*. The government has established commissions to control the quality of the prunes to be exported.

The development of an export market for the apple crop has been hindered by the great number of varieties grown in Yugoslavia. For that reason the authorities have attempted to limit production to a few varieties in order to provide possible increased exports of a standardized product.

THE LIVESTOCK ECONOMY

The importance of the livestock industry in Yugoslavia is shown by the fact that it provided 18.3 percent of the total national income in 1937, whereas all other branches of agriculture accounted for 24.6 percent.³² If stable export outlets can be found, an expansion of livestock production probably would be the most effective means of overcoming the ill effects of the pressure of farm population. Rapid expansion is jeopardized, however, by the precarious feedstuffs situation, which prevents a transfer from pasture feeding to more progressive stall feeding.

Before the land reform, the feudal economy made it impossible to produce feedstuffs in about a third of the territory comprising present Yugoslavia. Although the clover and alfalfa acreage has been expanded, the production of feedstuffs is still too limited to warrant a large increase in livestock numbers. The uncertainty of the corn yield is also a limiting factor. Furthermore, a change from an extensive to an intensive pastoral economy could only be accomplished over an extended period of time.

Nevertheless, various government measures have resulted in a gradual improvement of cattle and hog breeds. During the last decade a slight upward trend in livestock numbers has been apparent (see table 22). To many small peasant farmers, the sale of poultry and eggs represents virtually the only source of cash income.

TABLE 22.—*Livestock numbers in Yugoslavia, 1925, 1934, 1938, and 1939*

KIND	1925	1934	1938	1939
	<i>Thousands</i>	<i>Thousands</i>	<i>Thousands</i>	<i>Thousands</i>
Horses	1,106	1,206	1,264	1,273
Cattle	3,768	3,990	4,267	4,225
Hogs	2,802	2,792	3,451	3,503
Sheep	7,907	8,868	10,137	10,154
Poultry	16,800	21,500	22,800	22,500
	:	:	:	:

Compiled from official sources.

THE AGRICULTURAL EXPORT TRADE

Although exportable farm surpluses vary widely in accordance with crop yields, Yugoslavian agricultural exports constitute regularly between 50 and 60 percent of

³² The Royal Institute of International Affairs, *South-Eastern Europe, A Political and Economic Survey*, London, 1939, p. 144.

the value of all exports. Total Yugoslav farm exports are divided almost equally between vegetable and animal products.

Prior to 1930 Yugoslavia's imports exceeded the value of exports. The balance of payments was settled largely by emigrant remittances and by Germany's reparation payments. Since both these factors have now disappeared and hardly any capital import is forthcoming, Yugoslavia has had to make special efforts to maintain a high volume of exports. This is virtually the only method of assuring the country of sufficient foreign exchange to obtain her needed fibers and manufactured products.

TABLE 23 -Value of Yugoslavian exports by class of product, average 1935-1939, annual 1935 to 1939

CLASS OF PRODUCT	1935	1936	1937	1938	1939	AVERAGE 1935-1939
	: Million : dinars ¹	: Million : dinars	: Million : dinars	: Million : dinars	: Million : dinars	: Million : dinars
Total exports	4,030	4,376	6,272	5,047	5,521	5,049
Total farm exports	2,250	2,694	3,474	2,688	2,918	2,805
Vegetable products ...	1,132	1,243	1,939	1,368	1,323	1,401
Animal products	1,118	1,451	1,535	1,320	1,595	1,404
Forestry products	773	545	779	783	1,004	777
Mineral products	218	262	606	455	373	383
Metals ...	401	401	563	508	571	489
PERCENTAGE OF TOTAL EXPORTS						
	: Percent	: Percent	: Percent	: Percent	: Percent	: Percent
Total farm exports	55.8	61.6	55.4	53.3	52.9	55.6
Vegetable products ... ²	50.3	46.1	55.8	50.9	45.3	49.9
Animal products ²	49.7	53.9	44.2	49.1	54.7	50.1
Forestry products	19.2	12.5	12.4	15.5	18.2	15.4
Mineral products	5.4	6.0	9.7	9.0	6.8	7.6
Metals	10.0	9.2	9.0	10.1	10.3	9.7
	:	:	:	:	:	:

¹ One dinar at the current official rate of exchange = 2.2420 cents.

² As percentage of total farm products.

Compiled from official sources.

EXPORTS BY COUNTRY OF DESTINATION

Until 1935, when Yugoslavia participated in the League of Nations' economic sanctions against Italy, the Italian market was the principal outlet for Yugoslavian exports, taking more than 28 percent of the total. In 1935, however, Italy's share dropped to 16.7 percent and in 1936 to 3.1 percent; in 1939 it was still only 10.6 percent.

Germany's share in the export trade of Yugoslavia rose gradually until 1937. Contrary to the situation in Hungary, the annexation of Austria did not result in any marked increase in the combined purchases of Greater Germany. The German block,

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consisting of Germany, Austria, and Czechoslovakia, now buys nearly half the total exports. Greater Germany and Italy together took 56 percent of the total exports during 1935-1939.

An increase in exports to Italy may be expected as a result of a trade agreement recently concluded. In September 1939 Yugoslavia owed Italy a clearing debt of 135 million dinars (about 3 million dollars), which was to be met by increased exports of timber, minerals, and farm products.

Exports to Great Britain had already declined to 6.6 percent of the total in 1939. France took less than 3 percent of total exports during 1935-1939. There is little possibility of a further expansion of Greater Germany's share except by the addition of the volume formerly taken by Great Britain, unless Belgium and the Netherlands, now under German domination, lose their share of 7.9 percent.

TABLE 24.—Exports from Yugoslavia by country of destination,  
average 1935-1939, annual 1935 to 1939

| COUNTRY                     | 1935      | 1936      | 1937      | 1938      | 1939      | AVERAGE   |       |
|-----------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-------|
|                             | 1935      | 1936      | 1937      | 1938      | 1939      | 1935      | 1939  |
|                             | : Million | : Million | : Million | : Million | : Million | : Million |       |
|                             | : dinars  | : dinars  | : dinars  | : dinars  | : dinars  | : dinars  |       |
|                             | :         | :         | :         | :         | :         | :         |       |
| Germany .....               | 751       | : 1,039   | : 1,361   | : 1,814   | : 1,762   | :         | 1,820 |
| Austria .....               | 577       | : 640     | : 848     | : 306     | :         | :         |       |
| Czechoslovakia .....        | 540       | : 540     | : 493     | : 398     | : 801     | :         | 554   |
| Greater Germany .....       | 1,868     | : 2,219   | : 2,702   | : 2,518   | : 2,563   | :         | 2,374 |
| Belgium, Netherlands ...    | 152       | : 292     | : 662     | : 446     | : 452     | :         | 401   |
| Great Britain .....         | 212       | : 432     | : 465     | : 485     | : 367     | :         | 392   |
| France .....                | 63        | : 86      | : 339     | : 75      | : 140     | :         | 141   |
| Italy .....                 | 672       | : 137     | : 587     | : 324     | : 584     | :         | 461   |
| Switzerland .....           | 97        | : 98      | : 112     | : 84      | : 168     | :         | 112   |
| Rumania, Greece, Hungary:   | 365       | : 450     | : 456     | : 397     | : 489     | :         | 431   |
| United States .....         | 225       | : 214     | : 291     | : 256     | : 281     | :         | 253   |
| PERCENTAGE OF TOTAL EXPORTS |           |           |           |           |           |           |       |
|                             | : Percent | : Percent | : Percent | : Percent | : Percent | : Percent |       |
| Germany .....               | 18.6      | : 23.7    | : 21.7    | : 35.9    | : 31.9    | :         | 36.0  |
| Austria .....               | 14.3      | : 14.6    | : 13.5    | : 6.1     | :         | :         |       |
| Czechoslovakia .....        | 13.4      | : 12.3    | : 7.9     | : 7.9     | : 14.5    | :         | 11.0  |
| Greater Germany .....       | 46.3      | : 50.7    | : 43.1    | : 49.9    | : 46.4    | :         | 47.0  |
| Belgium, Netherlands ...    | 3.8       | : 6.7     | : 10.6    | : 8.8     | : 8.2     | :         | 7.9   |
| Great Britain .....         | 5.3       | : 9.9     | : 7.4     | : 9.6     | : 6.6     | :         | 7.8   |
| France .....                | 1.6       | : 2.0     | : 5.4     | : 1.5     | : 2.5     | :         | 2.8   |
| Italy .....                 | 16.7      | : 3.1     | : 9.4     | : 6.4     | : 10.6    | :         | 9.1   |
| Switzerland .....           | 2.4       | : 2.2     | : 1.8     | : 1.7     | : 3.0     | :         | 2.2   |
| Rumania, Greece, Hungary:   | 9.1       | : 10.3    | : 7.3     | : 7.9     | : 8.8     | :         | 8.5   |
| United States .....         | 5.6       | : 4.9     | : 4.6     | : 5.1     | : 5.1     | :         | 5.0   |
|                             | :         | :         | :         | :         | :         | :         |       |

Compiled from *Statistique du commerce extérieur* (annual).

## COMPOSITION OF AGRICULTURAL EXPORTS

In accordance with the predominance of corn and wheat in the production pattern of Yugoslavian agriculture, these grains constitute the principal agricultural export items. Since both crops are characterized by extreme fluctuations in yield, the surpluses available for export vary sharply from year to year. Even in years of favorable yields, most of the corn and wheat production is needed domestically. It is estimated that 57 percent of the population consumes cornbread exclusively and that only 24 percent consumes wheat.

The annual per-capita consumption of corn is 6.2 bushels and that of wheat 3.6. Domestic corn needs may be calculated as follows: for human consumption, about 95 million bushels; for feeding hogs and poultry, from 25 to 40; and for seed, about 6 million, or a total of 125 to 140 million bushels. The consumption of wheat is estimated at 55 million bushels, to which must be added from 15 to 17 million for seed. Normally from 7 to 10 million bushels of wheat are carried over.<sup>33</sup>

It is obvious that large exports are possible only if favorable yields prevail. Because of low yields, corn exports in 1935 and 1939 were below 4 million bushels whereas the 1937 exports, as a result of favorable yields in 1936 and 1937, were more than 8 times those of 1935 and 1939. The volume of wheat exports has been declining; the average for 1935-1939 was 30 percent below that of 1928-1932. Moreover, the annual fluctuations are pronounced. Between 1935 and 1939, for example, wheat exports ranged from a little over 1 million bushels in 1935 to 12 million in 1937. Exports of other grains are negligible. During 1938 and 1939 there were no exports of barley, oats, and rye.

Dry beans have long been important in Yugoslav farm exports. In line with the increased production during the last decade, average exports during 1935-1939 were 55 percent above the 1928-1932 level. The annual variations in exportable surpluses are not so sharp as those for grains. During the last 5 years, maximum exports of 49,000 tons in 1937 compare with minimum exports of 14,000 tons in 1939.

Hemp is the only industrial crop which has shown a continuously high level of exports during the last 5 years. The 1935-1939 export level was more than double that of 1928-1932.

With respect to oilseeds, Yugoslavia has not been in a position to supply her own needs. This is of special significance in view of the fact that oilseeds are urgently needed in all countries under German domination. Production and marketing are under the supervision of the government-controlled *Ujariša*, an organization which maintains high domestic prices by virtually forcing producers to sign contracts for the entire harvest. Soybeans have been exported in small quantities, principally to Germany the only country willing to pay the high price demanded. Total exports of soybeans amounted to 800 tons in 1937 and 4,700 in 1938. Of the 1939 crop of

<sup>33</sup> These figures are estimates, based on computations by O. von Franges. The present consumption level is probably higher, since the partial mobilization and some shortages in other foods tend to increase the consumption of bread grains.



10,100 tons, only 5,500 were taken by the *Ujgarica*, partly for export; the remainder was used by the peasants as protein feed. In spite of government efforts to make the peasants expand their oilseed acreages, net imports of oilseeds increased from 11,000 tons in 1937 to 21,000 in 1939.

Yugoslav fruit crops, particularly prunes, apples, and grapes, are regularly above domestic needs. In years of favorable yield, as in 1939, it is difficult to find sufficient export outlets. During 1935-1939 exports of fresh fruit ranged between 29,000 and 77,000 tons annually. Exports of dried prunes fluctuated between 8,000 and 42,000 tons annually during the same period.

The Yugoslav livestock industry exports substantial quantities of live cattle, live hogs, pork, dead poultry, and eggs. Live cattle exports, however, were cut in half between 1928-1932 and 1935-1939, whereas live hog exports were well maintained. Exports of poultry and eggs usually exceed in value those of live cattle and hogs and are nearly equal to those of fresh pork.

TABLE 25.—Principal Yugoslavian farm exports, averages 1928-1932,  
1935-1939; annual 1935 to 1939

| COMMODITIES     | AVERAGE<br>1928-1932   | 1935                   | 1936                   | 1937                   | 1938                   | 1939                   | AVERAGE<br>1935-1939   |
|-----------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
|                 | : Million<br>: bushels | : Million<br>: bushels | : Million<br>: bushels | : Million<br>: bushels | : Million<br>: bushels | : Million<br>: bushels | : Million<br>: bushels |
| Wheat, flour    | 10.5                   | 1.2                    | 11.0                   | 12.1                   | 4.5                    | 7.9                    | 7.3                    |
| Corn .....      | 8.0                    | 15.3                   | 3.6                    | 28.5                   | 18.4                   | 3.7                    | 13.9                   |
| Barley .....    |                        | 0.2                    | 0.1                    | 0.5                    |                        |                        | 0.2                    |
| Oats ... ..     | 0.1                    | 0.4                    |                        | 0.6                    |                        |                        | 0.2                    |
| Rye .....       | —                      | 0.1                    | 0.1                    | 0.4                    |                        |                        | 0.1                    |
|                 | : Thousand<br>: tons   | : Thousand<br>: tons   | : Thousand<br>: tons   | : Thousand<br>: tons   | : Thousand<br>: tons   | : Thousand<br>: tons   | : Thousand<br>: tons   |
| Beans, dry ...  | 18.0                   | 30.0                   | 19.0                   | 49.0                   | 30.0                   | 14.0                   | 28.0                   |
| Tobacco .....   | 3.1                    | 6.7                    | 4.1                    | 4.0                    | 6.1                    | 3.5                    | 4.9                    |
| Hops ... ..     | 3.6                    | 4.0                    | 4.0                    | 2.6                    | 2.9                    | 3.4                    | 3.4                    |
| Hemp ... ..     | 10.0                   | 21.0                   | 22.0                   | 26.0                   | 22.0                   | 24.0                   | 23.0                   |
| Flax .....      | 2.0                    | 8.0                    | 11.0                   | 15.0                   | 15.0                   |                        | <sup>1</sup> 12.2      |
| Fruit, fresh .. | —                      | 77.0                   | 64.0                   | 29.0                   | 69.0                   | 75.0                   | 62.8                   |
| Prunes, dry ... | —                      | 14.0                   | 30.0                   | 10.0                   | 8.0                    | 42.0                   | 20.8                   |
| Eggs .....      | 26.0                   | 12.0                   | 14.0                   | 14.0                   | 18.0                   | 17.0                   | 15.0                   |
| Cheese, butter  | 2.0                    | 2.2                    | 2.4                    | 2.1                    | 1.7                    | 1.9                    | 2.1                    |
| Meat, fresh ... | —                      | 23.0                   | 23.0                   | 21.0                   | 19.0                   | 21.0                   | 21.4                   |
| Meat products   | —                      | —                      | 3.0                    | 3.0                    | 3.0                    | 3.7                    | <sup>2</sup> 3.2       |
| Oilseeds .....  | —                      | —                      | 3.7                    | 21.1                   | 14.2                   | 11.4                   | <sup>2</sup> 12.6      |
| Animal fats ... | —                      | —                      | 2.6                    | 0.2                    | 1.2                    | 2.1                    | <sup>2</sup> 1.5       |
|                 | : Thousands            | : Thousands            | : Thousands            | : Thousands            | : Thousands            | : Thousands            | : Thousands            |
| Live cattle ... | 91.9                   | 38.5                   | 52.0                   | 71.4                   | 28.0                   | 35.0                   | 45.0                   |
| Live hogs ...   | 245.0                  | 218.0                  | 301.0                  | 307.0                  | 260.0                  | 298.0                  | 277.0                  |
|                 | : : : : : : : :        |                        |                        |                        |                        |                        |                        |

<sup>1</sup> Average 1935-1938.

<sup>2</sup> Average 1936-1939.

Compiled from official sources.

## GEOGRAPHIC DISTRIBUTION OF FARM EXPORTS

The greater part of the Yugoslavian agricultural surplus is sent to the markets of Central Europe. For some products, such as wheat and corn, the markets have changed from year to year, but for fruits and livestock products they have remained substantially the same during the last 5 years.

Austria, Czechoslovakia, and Italy were the principal purchasers of wheat throughout most of the post-war period. To a large extent, their wheat quotas were fixed by trade agreements. However, in 1936 and 1937, years of large export surpluses, Great Britain and France took more than 29 and 42 percent, respectively, of total wheat exports. In 1938 Greater Germany contracted for the entire surplus. In 1939, 86 percent went to Germany and the remainder to Italy. No wheat export surpluses may be expected during the 1940-41 marketing year. Surpluses in the next few years will be absorbed by Greater Germany and Italy.

The geographic distribution of corn exports has varied greatly from year to year. In 1935 and 1936 more than 80 percent was exported to the countries comprising Greater Germany. Their share, however, declined sharply in 1938 and 1939, when Great Britain and the Scandinavian and Low Countries entered the market. The Netherlands and Denmark, like Greater Germany, are now cut off from overseas supplies of feedstuffs. Consequently, they must depend largely on the corn surpluses of southeastern Europe. In view of urgent German needs there is little likelihood that these countries can obtain even a small part of their requirements.

Greece is normally Yugoslavia's chief market for dry beans, taking from 30 to 40 percent of the total surplus. The United States imported about 10 percent during 1935-1939, or a little less than Greater Germany. Exports have been prohibited since September 1939.

Most of the tobacco exports have normally been purchased by former Czechoslovakia. France and former Poland occasionally took small quantities. Germany is attempting to encourage production of Virginia tobacco in Yugoslavia, and in the future may take a portion of the total surpluses.

Greater Germany is by far the most important customer for Yugoslavian fruit. Only small quantities are exported to Switzerland. Poland purchased some dried prunes before 1939. No changes in the distribution of fruit exports may be expected.

Greater Germany and Italy took about 50 percent of all exports of live cattle during 1935-1939, and Greece and Great Britain each purchased about 10 percent. In 1939 nearly 90 percent went to the Axis powers, and Greece took a small share.

During the last few years virtually the entire surplus of live hogs and meat products and between half and two-thirds of the eggs have been exported to Germany, Austria, and Czechoslovakia. Switzerland and Italy took 20 and 10 percent, respectively, of the exports of eggs. Great Britain's share of 12 percent will now be available to Germany or Italy.

## POTENTIAL FARM SURPLUSES DURING AND AFTER 1940-41

## THE 1940-41 OUTLOOK

As in Hungary, the volume of the 1940-41 surpluses of farm products will be affected largely by the adverse weather conditions of last winter and spring rather than by the direct influence of the war. Some shortage of farm labor and draft animals has persisted because of the mobilization; however, these factors alone probably would not have greatly affected the volume of crop surpluses and livestock exports in 1940-41 if average or better-than-average yields had been realized. Difficulties in obtaining formerly imported farm products are certain to diminish exports of flax and oilseeds, since domestic products must now take the place of imports cut off by the British blockade.

The outlook for the 1940-41 wheat crop is far from promising. According to reliable information, the sowing of the winter wheat crop was restricted by bad weather in several important producing regions. This factor, together with the mobilization of many farmers, resulted in a reduction of 500,000 acres in the winter wheat acreage, or of about 9 percent. In addition, spring floods damaged 125,000 acres. Reports indicate that the 1940 crop was from 35 to 40 percent below that of 1939, and about 25 percent below the average for 1935-1939. No wheat exports are likely during 1940-41, especially since the rye crop is estimated at 20 percent below that of 1939 and 9 percent below the average for 1935-1938.

The 1940 production of barley, which serves as a bread grain for 10 percent of the population, is estimated at 24 percent below the 1939 crop and 20 percent below the 1935-1939 average. The oats crop is placed at 25 percent below that of 1939 and 17 percent below the 1935-1939 average. Unless supplies can be obtained from neighboring countries there will be a marked shortage of oats in Yugoslavia during 1940-41.

With respect to corn, however, the 1940 crop is estimated at 40 million bushels above the 1939 crop and 15 million above the average for 1935-1939. Although most of the apparent surplus would normally be retained to compensate for the shortage in other grain crops, German pressure may succeed in making about 20 million bushels available for export.

Since September 1939 exports of dry beans have been prohibited by government decree. In view of the unfavorable bread-grain outlook, it is unlikely that this prohibition will be cancelled, even though the crop probably will be close to normal.

Root crops and oleaginous plants apparently suffered relatively little from the adverse weather conditions; however, Yugoslavia will need its total production of oilseeds for domestic purposes. It is improbable that Germany will receive an increased share of the soybean crop.

The severe winter and unfavorable spring seriously reduced the fruit crops. It is estimated that this year's prune crop probably did not amount to more than 20

percent of the 1939 crop, or 65 percent of the average for 1935-1939. The export surplus of prunes accordingly will be drastically reduced. The cold and wet spring also seriously damaged vine crops.

As a consequence of the feed shortage, a reduction in the number of lard-type hogs seems certain. In order to conserve supplies the government has introduced three meatless days a week.<sup>34</sup> In view of the feed shortage and the livestock losses resulting from floods and disease, it is believed that livestock numbers will be reduced during the 1940-41 marketing season. This may not affect the level of the 1940-41 exports of hogs, and it is possible that the shipments may again approach 300,000 hogs.

#### THE OUTLOOK AFTER 1940 41

As in Rumania and Hungary, the long-time possibilities of a more intensive farm production and of shifts to industrial crops depend largely on factors connected with the present land distribution and the status of the peasants. Yugoslavian economists are agreed that the most serious handicap to a permanent improvement of farming conditions lies in the existence of an excessive agricultural population and the uneconomic size of the average peasant holding

The prevalence of uneconomic holdings tends to prevent an increase in productivity. Moreover, since most of the farms lack sufficient feedstuffs, the most effective means of bringing about an intensification of farming - namely, through an increase in livestock numbers - can be realized only after the feedstuffs basis has been greatly increased and the peasants have learned the essentials of progressive breeding and feeding methods. Lack of capital and the difficulties in maintaining a subsistence level of consumption on the small holdings seriously retard any rapid improvement in farming methods.<sup>35</sup> According to an investigation by the Yugoslavian agricultural cooperatives, only 438 of every 1,000 peasants possess iron plows, 183 have wooden plows, and 379 own none at all. There is urgent need of at least 100,000 additional iron plows.<sup>36</sup>

Under the existing structure of the Yugoslavian farm economy, no essential shifts in production or increases in productivity may be expected during the next few years. The tendency toward acreage increases in industrial crops, such as oilseeds, fibers, and tobacco, may be accelerated. In view, however, of the lack of textiles and oilseeds formerly imported from abroad, an increase in the exportable surpluses of these crops is unlikely. No expansion in grain acreage may be expected. The export level will be determined by current yields. The conclusion seems warranted that a significant expansion in farm production must await improvement of the peasants' status. This in turn will tend to increase domestic consumption and thus curtail exportable surpluses.

<sup>34</sup> American Consulate, Belgrade, July 8, 1940

<sup>35</sup> Mirkovic, Miji, *Yugoslavian Agricultural Policy*, abstr. in *Südost-Economist*, March 29, 1940.

<sup>36</sup> *Südost-Echo*, Feb 16, 1940



## BULGARIA

Bulgaria is the smallest of the countries constituting the Danube Basin, with a population of 6.3 million inhabitants. The territorial changes following the Balkan wars and the World War did not greatly alter the total area of the country. Of the districts ceded by Bulgaria to Rumania and Yugoslavia, comprising an area of 2.3 million acres, 50 percent consisted of plow land. On the other hand, of the 4 million acres gained from Turkey, less than 10 percent was plow land. These shifts had a marked effect on the production pattern of Bulgarian agriculture and on the composition of farm surpluses.

Over 80 percent of the population is engaged in farming, and farm products constitute 95 percent of all exports. The territorial changes necessarily affected the post-World-War development of the Bulgarian farm economy and the development of the national economy as well. Before the acquisition of southern Dobrogea from Rumania, of a total area of 25.5 million acres, only 10.1 million, or 39.6 percent, were arable. The return of this fertile region has noticeably improved the ratio of arable to total land, since 70 percent of the total area of southern Dobrogea is in grains.

Like most Danubian countries, Bulgaria was predominantly a grain-producing country before the World War. Grain exports during 1935-1939 declined by 58 percent for wheat, 76 percent for corn, 90 percent for rye, and 81 percent for barley, compared with 1909-1912. It is significant, however, that the country has made progress in adjusting agricultural production by the adoption of a more intensive agriculture, with the result that today increased exports of tobacco, fruits, and oilseeds partly offset the loss of grain exports.

### THE AGRICULTURAL STRUCTURE OF BULGARIA

Outstanding problems confronting Bulgarian agriculture are those arising from the small-sized farms, scattered holdings, and the steadily increasing pressure of farm population. Even before the World War Bulgaria was a peasant country, with few large estates. In 1908 only 0.1 percent of the total number of farms consisted of holdings of more than 250 acres, covering 5.5 percent of the total area. About 45.5 percent of all farms had less than 5 acres, occupying only 6.9 percent of the total area. Most of the farms ranged between 5 and 75 acres, 42.3 percent ranging from 5 to 25 acres and 36.5 percent from 25 to 75.

Since even before the World War virtually all land was in small and medium-sized farms, it is obvious that land reform could make little change in land distribution. Nevertheless, the reform law of 1921 provided for expropriation of all holdings exceeding 75 acres. In 1924 and again in 1930, however, the expropriation measures were modified, with the result that the total area disposed of did not exceed 200,000 acres.

Population increase and continuous subdivision of land through inheritance have tended to reduce the size of the holdings. In 1926, of a total of 750,000 farms

427,000, or 57 percent, were less than 12.5 acres in extent.<sup>37</sup> At that time the average size of all farms was 15 acres. By 1934 it had declined to 12.5 acres.<sup>38</sup>

Since opportunities in other occupations are limited little migration from the land can take place. The problem of pressure of the surplus farm population is even more serious in Bulgaria than in the other Danubian countries. It is estimated that there are 5.8 farm workers for each 25 acres of land, as compared with 4.1 in Rumania, 4.0 in Yugoslavia, and 2.8 in Hungary.<sup>39</sup> Studies by the Bulgarian Institute of Agricultural Economics show that only about 60 percent of the supply of available labor can be effectively utilized.

These conditions indicate clearly that intensification of agriculture is the only solution of the problem of the farm labor surplus. It appears, however, that serious obstacles must be overcome before such intensification can be accomplished - foremost among them the existing system of landholdings, which makes for inefficiency in the use of labor.

Through subdivision, resulting from inheritance and community legislation, the average Bulgarian farm of 12.5 acres now consists of 15 different strips of land, often widely separated. Between 7 and 10 percent of the human labor and 10 to 20 percent of the animal labor is wasted in traveling to and from these scattered fields.

The uneconomic size of farm holdings necessarily retards the adoption of advanced farming methods. Although some progress has been made in replacing wooden with iron plows, the Central Statistical Office estimates that in 1934 only 391,000 iron plows were in use, whereas the number of wooden plows totaled 457,000. On the average one iron plow served for the cultivation of 75 acres of land. Harrows were owned on only 5 percent of the farms.<sup>40</sup>

To remedy this situation the government on April 29, 1939, enacted a law to facilitate the distribution of agricultural implements to farmers.<sup>41</sup> Under this law the Agricultural and Cooperative Bank of Bulgaria was authorized to purchase and distribute farm implements against non-interest-bearing loans to be repaid in 5 years. It was provided that about 100,000 units, valued at 500 million leva<sup>42</sup> would be supplied in 1939-40. In view of the difficulties resulting from the war, it seems highly improbable that more than a small fraction of this number will be supplied.

<sup>37</sup> Mollath J. St., *Die sozialökonomische Struktur der bulgarischen Landwirtschaft* (The Social and Economic Structure of Bulgarian Agriculture) Berlin, 1936 p. 118.

<sup>38</sup> Royal Institute of International Affairs, *South Eastern Europe. A Political and Economic Survey* London, 1939, p. 170.

<sup>39</sup> Gouzenoff Aranas, *Bulgarian Agriculture and Measures for its Improvement*, Sofia, 1936.

<sup>40</sup> Mollath J. St., *op. cit.*, pp. 26, 119.

<sup>41</sup> International Institute of Agriculture, *Monthly Bulletin of Agricultural Economics and Sociology*, Dec. 1939, p. 548.

<sup>42</sup> One lev at the August 1939 official rate of exchange (latest available quotation) 1 211 cents.

To these difficulties must be added the inherent attitude of the Bulgarian peasant. "The extensive farm practices prevailing cannot be changed as rapidly as is desirable, since the psychological basis for a transition to intensive farming is still lacking and the traditional habits of most of the peasants cannot be easily overcome."<sup>43</sup> Nevertheless, a tendency toward more intensive agriculture may be observed.

#### PROGRESS TOWARD INTENSIFICATION OF AGRICULTURE

The authorities have exerted every effort to induce the peasants to expand production of crops requiring a larger supply of labor than is required for grains. The closer trade relations with Germany and the German demand for increased quantities of these products have accelerated this tendency. The shift from grain to industrial crops, however, has not yet progressed far. Moreover, the most effective means of intensifying the farming system - expansion of livestock production - faces serious obstacles.

The authorities are also endeavoring to educate the farmers by extension work, through the *ag. centers*, or county agents. In addition the areas devoted to some crops are being regulated through government monopolies and by price fixing and buying operations, and the government is distributing high-quality seeds and aiding financially in the construction of dairies and warehouses. These measures, it is believed, will encourage farmers to extend the production of more intensive crops.

Probably more progress toward intensification was made in Bulgaria during the post-World-War period than in any other Danubian country. Table 26 shows the expansion in specified crops, using the pre-World-War period (1908-1912 = 100) as a basis for comparison. It may be observed that the relative changes in acreage have been pronounced, not only when compared with the period prior to the World War, but also when compared with the 5-year period 1930-1934. It will also be noticed, however, that in spite of the rapid expansion, most of these crops still occupy a relatively small proportion of the total cultivated land (see table 27).

TABLE 26 -Acreage expansion of specified Bulgarian crops, averages 1908-1912, 1930-1934; and 1938

| YEAR          | SUNFLOWERS | TOBACCO | COTTON  | SUGAR BEETS | HEMP    | ORCHARDS |
|---------------|------------|---------|---------|-------------|---------|----------|
|               | : Index    | : Index | : Index | : Index     | : Index | : Index  |
|               | :          | :       | :       | :           | :       | :        |
| 1908-1912 .   | : 100      | : 100   | : 100   | : 100       | : 100   | : 100    |
| 1930-1934 .   | : 3,390    | : 349   | : 1,524 | : 541       | : 141   | : 239    |
| 1938 .. . . . | : 8,000    | : 500   | : 3,990 | : 541       | : 270   | : 390    |
|               | :          | :       | :       | :           | :       | :        |

1908-1912 and 1930-1934 data derived from J. St. Molloff (see footnote 37), 1938 data compiled from official sources.

<sup>43</sup> Molloff, J. St., *op. cit.*, p. 108

## LAND UTILIZATION

As in all other Danubian countries, grain crops predominate in Bulgarian agriculture, although the proportion of grain acreage (67.7 percent of the cultivated land) is smaller than in any other Danubian country. About half the grain acreage is devoted to wheat, one-fourth to corn, and one-fourth to rye, barley, and oats. Of the food crops other than grains, which occupy 5 percent of the cultivated land, dry beans are by far the most important, accounting for half the area devoted to such crops.

The acreage in industrial crops has increased noticeably, but at present still accounts for only 8.7 percent of the total cultivated land. Oleaginous plants constitute the greater part of such acreage, followed by fiber crops, tobacco, and sugar.

It is characteristic of Bulgaria that in spite of the relative scarcity of land the prevailing primitive crop system allows 11.7 percent of the arable land to remain fallow each year. In this respect also progress has been made, for the share of fallow land was over 20 percent before the World War.

The present distribution of acreage among the various crops in 1938 is shown in table 27.

TABLE 27.—*Distribution of Bulgarian crop acreage, 1938<sup>1</sup>*

| LAND DISTRIBUTION   | ACREAGE       | PERCENTAGE<br>OF CULTI-<br>VATED LAND | LAND DISTRIBUTION    | ACREAGE       | PERCENTAGE<br>OF CULTI-<br>VATED LAND |
|---------------------|---------------|---------------------------------------|----------------------|---------------|---------------------------------------|
|                     | :1,000 acres: | Percent                               |                      | :1,000 acres: | Percent                               |
| Total grains .. ..  | 6,862         | 67.9                                  | Total oilseeds ..... | 734           | 7.3                                   |
| Wheat .....         | 3,447         | 34.1                                  | Sunflower seed ..    | 467           | 4.6                                   |
| Corn .....          | 1,730         | 17.1                                  | Cottonseed .....     | 140           | 1.4                                   |
| Barley .....        | 556           | 5.5                                   | Rapeseed .....       | 54            | .5                                    |
| Rye .....           | 465           | 4.6                                   | Soybeans .....       | 30            | .3                                    |
| Oats .....          | 356           | 3.5                                   | Other .....          | 43            | .4                                    |
| Total food crops .. | 504           | 5.0                                   | Tobacco .....        | 89            | .9                                    |
| Beans .....         | 247           | 2.4                                   | Sugar beets .....    | 30            | .3                                    |
| Watermelons .....   | 140           | 1.4                                   | Rotation meadow ..   |               |                                       |
| Potatoes .....      | 49            | .5                                    | and other feed ..    |               |                                       |
| Peppers .....       | 15            | .2                                    | crops .....          | 615           | 6.4                                   |
| Total fibers .....  | 172           | 1.7                                   | Fallow .....         | 1,180         | 11.7                                  |
| Cotton .....        | 140           | 1.4                                   | Total culti .....    |               |                                       |
| Hemp .....          | 25            | .3                                    | tivated land .....   | 10,099        | -                                     |
| Flax .....          | 7             | .1                                    | Total acreage .....  | 25,488        |                                       |
|                     |               |                                       |                      |               |                                       |

<sup>1</sup> Acreages of minor crops are included in the subtotals.



## THE PATTERN OF AGRICULTURAL PRODUCTION

## ACREAGE, YIELD, AND PRODUCTION OF PRINCIPAL CROPS

For about 70 percent of the Bulgarian population wheat and rye are the principal food grains, and the remaining 30 percent uses corn. The acreage and production of wheat and corn during the last two decades, however, have not kept pace with the population increase. As a result the available surpluses have been noticeably reduced. Few changes have taken place during the last decade in the total area devoted to grain crops. A slight increase in the wheat acreage was offset by a decrease in the acreage sown to corn, rye, barley, and oats. As a result of the government program of agricultural intensification, further reductions in grain acreage may be expected.<sup>44</sup>

Better seed selection and a more advanced system of crop rotation may eventually increase average yields. Field experiments of the Sofia Experiment Station have shown that even a slight improvement in the rotation system, with increased use of fertilizers, will greatly raise the present yield of most grains.<sup>45</sup> It does not appear, however, that such improvements can be attained in the near future.

As in all other Danubian countries, climatic conditions in Bulgaria do not permit constant yields. The average deviation from the mean yield of wheat was 13.2 percent during 1930-1939, and that for corn was 9.4 percent. The record wheat yield of 1938 led to an average level of wheat production of 64.4 million bushels during 1935-1939, 20 percent above the average for 1933-1937 and 28 percent above that for 1928-1932. The extent of the crop fluctuations is shown by the fact that the 1938 crop of 79 million bushels was twice the size of the 1934 crop of 39.6 million, whereas the 1938 corn crop of 21 million bushels was little more than half the 1935 crop of 39.7 million.

Tobacco production, insignificant before the World War, has become the most important source of export surpluses, largely because of the acquisition after the Balkan war of extensive tobacco-growing districts from Turkey. The Ministry of Agriculture has endeavored to improve the quality of the tobacco crop by providing peasants with good plants, combatting various plant diseases, and establishing proper facilities for drying and manufacturing. The government virtually regulates the area that may be planted to tobacco each year. During the depression, this area was sharply restricted, but since that time much of the acreage reduction has been recovered as a result of improved export possibilities. The Agricultural and Cooperative Bank purchases tobacco at fixed prices whenever the market situation warrants this action.

Before the World War Bulgaria had to import more than 10,000 tons of sugar annually. During the last decade, however, domestic production of sugar beets has

<sup>44</sup> Molloff, J. St., *op. cit.*, p. 124.

<sup>45</sup> It should be noted that the data on acreage and production after 1936 are not strictly comparable with those of the period before 1936, since the method of collecting these statistics has been changed.

been sufficient to meet total domestic needs. The government controls the sugar beet acreage through agreements with sugar refineries. This control explains in part the sharp annual fluctuations in production.

TABLE 28 *Acreage, yield, and production of Bulgarian grain crops, averages 1928-1932, 1933-1937, 1935-1939; annual 1933 to 1939*

| CROP           | AVERAGES  |           |           | 1933    | 1934    | 1935    | 1936    | 1937    | 1938    | 1939    |
|----------------|-----------|-----------|-----------|---------|---------|---------|---------|---------|---------|---------|
|                | 1928-1932 | 1933-1937 | 1935-1939 |         |         |         |         |         |         |         |
|                | 1,000     | 1,000     | 1,000     | 1,000   | 1,000   | 1,000   | 1,000   | 1,000   | 1,000   | 1,000   |
| ACREAGE        | acres     | acres     | acres     | acres   | acres   | acres   | acres   | acres   | acres   | acres   |
| Wheat          | 2,931     | 3 025     | 3,086     | 3,097   | 3,114   | 2,729   | 2 955   | 3 233   | 3,448   | 3,064   |
| Rye            | 563       | 491       | 471       | 516     | 494     | 433     | 489     | 521     | 464     | 447     |
| Barley         | 603       | 549       | 539       | 602     | 566     | 501     | 537     | 540     | 555     | 563     |
| Oats           | 321       | 316       | 313       | 327     | 318     | 268     | 299     | 369     | 353     | 274     |
| Corn           | 1,757     | 1 720     | 1,674     | 1,796   | 1,692   | 1 775   | 1 653   | 1 685   | 1,731   | 1 527   |
|                | Bush      | Bush      | Bush      | Bush    | Bush    | Bush    | Bush    | Bush    | Bush    | Bush    |
| YIELD PER ACRE | els       | els       | els       | els     | els     | els     | els     | els     | els     | els     |
| Wheat          | 17.1      | 17.7      | 20.8      | 17.9    | 12.7    | 17.6    | 20.4    | 20.1    | 22.9    | 22.8    |
| Rye            | 16.9      | 16.9      | 18.0      | 18.8    | 13.0    | 17.9    | 16.7    | 18.0    | 15.9    | 21.6    |
| Barley         | 24.7      | 24.8      | 27.8      | 26.8    | 15.2    | 25.9    | 27.6    | 28.1    | 29.4    | 27.2    |
| Oats           | 23.2      | 25.3      | 26.1      | 27.4    | 16.1    | 23.8    | 31.3    | 27.4    | 17.4    | 32.2    |
| Corn           | 17.9      | 20.5      | 20.8      | 20.3    | 18.4    | 22.4    | 20.8    | 20.1    | 12.1    |         |
|                | 1,000     | 1,000     | 1,000     | 1,000   | 1,000   | 1,000   | 1,000   | 1,000   | 1,000   | 1,000   |
| PRODUCTION     | busbels   | busbels   | busbels   | busbels | busbels | busbels | busbels | busbels | busbels | busbels |
| Wheat          | 50,338    | 53,647    | 64,370    | 55,454  | 39,595  | 47,925  | 60,351  | 64,910  | 78,951  | 69,713  |
| Rye            | 9,527     | 8,293     | 8,483     | 9,683   | 6,438   | 7,767   | 8,188   | 9,387   | 7,397   | 9,674   |
| Barley         | 14,881    | 13,603    | 14,977    | 16,147  | 8,609   | 12,940  | 14,809  | 15,152  | 16,294  | 15,332  |
| Oats           | 7,441     | 7,984     | 8,158     | 8,947   | 5,133   | 6,379   | 9,368   | 10,094  | 6,137   | 8,810   |
| Corn           | 31,534    | 35,278    | 32,203    | 37,440  | 31,091  | 39,721  | 34,309  | 33,928  | 20,955  |         |

<sup>1</sup> 1935-1938 average.

Compiled from *International Yearbook of Agricultural Statistics* and other official sources.

TABLE 29 *Bulgarian production of principal nongrain crops, averages 1928-1932, 1933-1937, 1935-1939; annual 1933 to 1939*

| CROP           | AVERAGES  |           |           | 1933  | 1934  | 1935  | 1936  | 1937  | 1938  | 1939  |
|----------------|-----------|-----------|-----------|-------|-------|-------|-------|-------|-------|-------|
|                | 1928-1932 | 1933-1937 | 1935-1939 |       |       |       |       |       |       |       |
|                | 1,000     | 1,000     | 1,000     | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
|                | tons      | tons      | tons      | tons  | tons  | tons  | tons  | tons  | tons  | tons  |
| Food crops     |           |           |           |       |       |       |       |       |       |       |
| Beans dry      | 53.3      | 61.1      | 50.1      | 67.0  | 45.7  | 61.2  | 70.2  | 61.3  | 7.8   |       |
| Potatoes       | 58.3      | 121.1     | 122.9     | 90.6  | 94.3  | 135.3 | 121.9 | 163.5 | 71.1  |       |
| Peppers        | -         | -         | -         | 29.3  | 35.2  | -     | 57.3  | 87.1  | 96.0  |       |
| Fibers         |           |           |           |       |       |       |       |       |       |       |
| Hemp           | 1.6       | 3.8       | 4.3       | 3.4   | 3.0   | 3.8   | 3.7   | 5.2   | 4.6   |       |
| Flax           | .1        | 3.1       | .4        | -     | 3     | .4    | 1     | .6    | .3    |       |
| Cotton         | 1.0       | 7.0       | 8.9       | 2.7   | 4.4   | 9.4   | 7.2   | 11.4  | 7.7   |       |
| Total          | 2.7       | 11.1      | 13.6      | 6.2   | 7.7   | 13.6  | 11.0  | 17.2  | 12.6  |       |
| Oilseeds       |           |           |           |       |       |       |       |       |       |       |
| Soybeans       | -         | 1         | 11.5      | -     | -     | 19.3  | 5.5   | 12.8  | 7.5   |       |
| Peanuts        | -         | 1.7       | 2.5       | .3    | 7     | 2.0   | 2.2   | 3.4   | 2.2   |       |
| Hempseed       | 1.2       | 2.4       | 2.7       | 1.9   | 2.1   | 2.7   | 2.7   | 2.8   | 2.5   |       |
| Rapeseed       | -         | 8.0       | 14.5      | 1.0   | 9.3   | 24.4  | 2.1   | 3.1   | 23.1  | 20    |
| Cottonseed     | -         | 15.8      | 25.6      | 7.1   | 10.3  | 20.5  | 16.6  | 24.3  | 17.7  | 49    |
| Sesame seed    | .3        | 2.6       | 1.6       | 3.8   | 3.1   | 1.7   | 3.1   | 1.5   | .2    |       |
| Sunflower seed | -         | 134.3     | 156.7     | 84.4  | 90.3  | 132.7 | 181.2 | 183.0 | 131.6 | 155   |
| Sugar beets    | 275.1     | 169.9     | 160.2     | 331.5 | 21.5  | 172.7 | 89.7  | 234.4 | 144.0 |       |
| Tobacco        | 27.8      | 33.8      | 35.8      | 27.4  | 23.7  | 30.6  | 47.3  | 39.6  | 19.3  | 42    |
| Grapes         | 373.0     | 491.8     | 549.4     | 482.7 | 508.7 | 622.3 | 334.9 | 510.6 | 729.9 | 900   |

<sup>1</sup> 1935-1938 average.

Compiled from *International Yearbook of Agricultural Statistics* and other official sources.

Among the fiber crops, cotton has shown the greatest expansion in recent years. Production increased ninefold between 1928-1932 and 1935-1938, but still falls short

of domestic needs. In 1938 and 1939, for instance, 14,000 and 12,000 short tons, respectively, were imported to supplement domestic production. The production of most oleaginous plants has increased greatly during the last decade. Sunflower seeds take first place among the oilseeds. The increased production of oilseeds has made Bulgaria virtually self-sufficient in vegetable oils. Rapeseed production has been predominantly for export. Cottonseed output has increased as a result of the expansion in production of lint cotton.

Rapid progress has also been made recently in the fruit industry. Largely because of the work of the government experiment stations, both quantity and quality of the fruit crops have improved noticeably. The most striking development was the success in the cultivation of table grapes (at the expense of wine grapes), brought about in response to the export demand for table varieties.

#### THE LIVESTOCK ECONOMY

The most serious handicap to the development of an intensive livestock industry in Bulgaria lies in the insufficiency of the domestic feed supply. Before the World War communal pastures furnished a considerable portion of the necessary fodder. As a result of the land reform, however, the area in communal pastures was reduced from 2.2 million acres in 1908 to less than 1 million at the present time. It is estimated that the present number of livestock in Bulgaria requires 2.8 billion carbohydrate units and 235 million protein units annually, even assuming that feeding takes place during only 180 days and that the animals utilize pastures during the rest of the year.<sup>46</sup> Under present conditions, however, only 2.0 billion carbohydrate units and 180 million protein units are produced annually. As a result there is an annual deficit of 30 percent in feed units and of 25 percent in protein units.

The government has made recommendations with a view to improving the feed-stuffs situation. The feedstuffs acreage recommended and the actual acreages are shown in table 30. It will be noted that no actual increase in the acreage planted to fodder crops has taken place since 1934, and that in most cases the 1938 acreage is only a fraction of the acreage anticipated in the government program.

TABLE 30 --Bulgarian feedstuffs acreage in 1934 and 1938, and 1940 acreage recommended by Bulgarian Government

| COMMODITY               | ACREAGE<br>1934 | ACTUAL ACREAGE<br>1938 | RECOMMENDED<br>ACREAGE<br>1940 | 1938 ACREAGE AS<br>PERCENT OF RECOM-<br>MENDED ACREAGE |
|-------------------------|-----------------|------------------------|--------------------------------|--------------------------------------------------------|
|                         | 1,000 acres     | 1,000 acres            | 1,000 acres                    | Percent                                                |
| Vetch . . . . .         | 437             | 560                    | 464                            | 83                                                     |
| Alfalfa . . . . .       | 71              | 247                    | 105                            | 42                                                     |
| Espartaco . . . . .     | (1)             | 247                    | 2.4                            | 1                                                      |
| Green corn . . . . .    | 147             | 494                    | 20                             | 4                                                      |
| Forage millet . . . . . | 57              | 124                    | 63                             | 51                                                     |
| Mangels . . . . .       | 57              | 148                    | 16                             | 11                                                     |

<sup>1</sup> Negligible. *Bulgarian Agriculture and Measures for its Improvement*, A. Ouzounoff, 1936.

<sup>46</sup> Chlebarov, G. S., "Die bulgarische Tierzucht und ihre Probleme" (Bulgarian Livestock Economy and its Problems), *Zeitschrift der bulgarischen landwirtschaftlichen Gesellschaft*, vol XXXV, 1936.

The experiment stations and county agents have succeeded in bringing about some improvement in quality of poultry and eggs, which are the most important surplus products in the livestock industries. All categories of livestock, however, show a continual reduction in numbers, largely because of inadequate feed supplies. Table 31 gives Bulgarian livestock numbers in 1934.

TABLE 31.-Bulgarian livestock numbers, 1934

| KIND                 | NUMBERS          | KIND                | NUMBERS          |
|----------------------|------------------|---------------------|------------------|
|                      | <i>Thousands</i> |                     | <i>Thousands</i> |
| Horses . . . . .     | 532              | Buffaloes . . . . . | 375              |
| All cattle . . . . . | 1,498            | Sheep . . . . .     | 8,839            |
| Milk cows . . . . .  | 176              | Hogs . . . . .      | 902              |
| All cows . . . . .   | 281              | Poultry . . . . .   | 12,800           |

Compiled from official sources.

### THE AGRICULTURAL EXPORT TRADE

Since Bulgaria has no important mineral or manufacturing industries, its exports consist almost exclusively of agricultural products. The nonagricultural population of a little over 1 million can consume only a fraction of the farm surpluses. To the Bulgarian economy, therefore, exports of farm products are essential for three reasons: (1) they provide most of the cash income of the peasant; (2) they are virtually the only means of securing foreign exchange for the necessary imports of fibers, textiles, and machinery; and (3) they provide funds for meeting the foreign debt service.

#### CHANGING COMPOSITION OF FARM EXPORTS

Territorial changes, as well as the progress attained in promoting the production of more intensive crops, have resulted in marked changes in the composition of Bulgarian farm exports (see table 32). Most striking are the shifts in the importance of grain and tobacco in the export trade. Before the World War, grain crops contributed nearly two-thirds to the total value of exports, whereas in 1938 and 1939 they constituted less than 10 percent of the total. The sharp decline in the importance of grain in the export trade may be attributed to the post-war loss of grain-surplus-producing regions, increased domestic consumption resulting from population growth, and the increase in surpluses of other farm products.

The pre-World-War place of cereals has now been taken by tobacco. Exports of tobacco were insignificant before the World War, whereas during the past decade this product has constituted the outstanding export item, representing about 40 percent of the value of all exports.



Hardly less significant is the increase in the export trade in fruits. Until the world depression, fruit exports constituted only a fraction of 1 percent of total exports. In the 1930's, however, a continually increasing importance is apparent. In 1939 fruit exports represented nearly 20 percent of total exports, and were 3 times those of grain.

Exports of live animals and meat products have always been relatively insignificant as a result of the unsatisfactory domestic feed situation. There has been a recent tendency toward reducing the exports of live animals in favor of meat products. Cattle and cheese exports have declined steadily. Eggs still represent the outstanding export product of the livestock economy.

Rose-oil exports, a Bulgarian monopoly, have suffered from the competition of synthetic substitutes in foreign markets. Oilseed exports showed a marked expansion until 1937; however, during 1938 and 1939 increased domestic utilization reduced the surpluses.

TABLE 32. *Composition of Bulgarian farm exports, 1939 with comparisons*  
[Expressed as percentages of value of total exports]

| COMMODITY             | 1911 | 1929 | 1933 | 1936 | 1937 | 1938 | 1939 |
|-----------------------|------|------|------|------|------|------|------|
| Grains and flour .... | 64.3 | 8.9  | 13.8 | 14.0 | 18.7 | 9.5  | 7.4  |
| Tobacco .....         | 1.0  | 45.3 | 41.3 | 32.3 | 32.1 | 42.4 | 41.0 |
| Beans, dry .....      | 3.3  | 2.1  | 2.6  | 2.4  | 2.4  | 0.4  | ..   |
| Fruit .....           | 0.2  | 0.9  | 4.3  | 9.4  | 7.5  | 17.5 | 19.2 |
| Oilseeds .....        | 2.0  | 2.4  | 1.9  | 4.9  | 5.0  | 2.1  | 3.9  |
| Cattle ....           | 1.2  | 1.9  | 0.7  | 1.0  | 1.2  | 0.8  | 0.3  |
| Hogs .....            | ..   | 0.2  | —    | 0.9  | 1.7  | 2.3  | 1.2  |
| Poultry .....         | 0.5  | 0.4  | 1.2  | 0.3  | 0.5  | 0.5  | 0.2  |
| Total live animals .. | 4.5  | 3.4  | 2.0  | 2.2  | 3.4  | 3.6  | 1.7  |
| Meat, poultry, fat .. | —    | 0.4  | 1.9  | 6.4  | 5.4  | 4.6  | 2.1  |
| Cheese .....          | 2.4  | 1.2  | 1.2  | 1.1  | 0.7  | 1.0  | 0.3  |
| Eggs .....            | 7.4  | 11.5 | 16.0 | 11.9 | 8.6  | 7.8  | 8.4  |
| Hides .....           | 1.7  | 5.3  | 4.1  | 3.6  | 4.5  | 1.8  | 1.8  |
| Rose oil .....        | 4.1  | 5.4  | 1.8  | 1.3  | 1.3  | 1.2  | 1.3  |

*Weltwirtschaftliches Archiv*, "Die staatlichen Massnahmen zur Förderung der Ausfuhr der Agrarprodukte Bulgariens," by Milka Deyanowa, March 1940, p. 430.

#### VOLUME OF FARM EXPORTS

Although farm exports form the basis of the Bulgarian economy, the absolute volume of most surpluses is small, particularly in comparison with the needs of the European deficit countries (see table 33).

Among the grains, only wheat and corn furnish continuous though varying surpluses. In relation to the surpluses of the other Danubian countries, however, Bulgarian corn exports are of minor significance. The level of corn exports during

1935-1939 was 57 percent below that of the average for 1928-1932. Corn exports show wide fluctuations. For example, in 1936 exports amounted to 4 million bushels, whereas in 1939 only 60,000 bushels were exported.

Wheat exports during 1935-1939 exceeded those of 1928-1932 by nearly 30 percent. Even the average 1935-1939 exports, however, were only one-sixth those of Rumania. The record 1937 exports of 7.2 million bushels would have met only one-sixth of the German wheat imports of that year, one-fifth of the Belgian, or one-third of the Dutch imports.

Between 1933 and 1937, exports of dry beans were large, and could have met about 75 percent of German requirements. During 1938 and 1939, however, the upward tendency in exports was reversed partly because of crop fluctuations and partly as a result of government precautionary measures to safeguard domestic food supplies.

For the same reasons the increased production of oilseeds has been used largely to make Bulgaria independent of foreign sources. The sunflower-seed crop still provides most of the total oilseed exports. The peak was reached in 1937, when exports amounted to 47,700 short tons. In 1938 only 10,900 tons were exported. Increased exports of soybeans, however, may be expected in years of normal yields, since in 1940 the soybean area was increased to 100,000 acres, as compared with 44,000 in 1939. To the Bulgarian farm economy, oilseeds represent an important source of income. Even the high 1938 exports could have met only 3 percent of the total German imports of oilseeds. Likewise, the record oilcake exports of 1937 - 54,500 tons - amounted to no more than 2 percent of the German oilcake imports of that year.

The prosperity of 120,000 peasant holdings, representing one-sixth of the total number of Bulgarian farm holdings, depends on the exports of tobacco. The government regulates production according to market conditions and exercises control over the quality of the crop. Since export potentialities improved during the last few years, the number of tobacco growers increased. Exports during 1935-1939 were 23 percent above those for 1928-1932.

Grapes are now the most important fruit entering the Bulgarian export trade. The government has succeeded in inducing peasants to reduce their production of wine grapes and to expand the production of table grapes in response to the increased foreign demand for this fruit. As a result, exports of grapes rose rapidly from 3,500 tons in 1928-1932 to 45,100 in 1935-1939.

Exports of live animals and animal products have declined, largely because of the inadequacy of domestic feedstuffs. Live cattle exports have decreased sharply, but during the last few years live hogs have been exported in increasing numbers. Even these exports, however, amount to only about 10 percent of the exports of either Hungary or Yugoslavia. Exports of meat products, chiefly dressed poultry, have increased; however, the volume is still insignificant.

In general it appears that although Bulgarian farm surpluses, except for tobacco, are too small to go far toward meeting the urgent needs of the European

deficit countries, considerable progress has resulted from the various government measures in the field of production and export regulation. The application of government measures was begun in 1930, when a "Grain Administration" was established to lend support to peasants impoverished by the precipitous decline in the price of grain. A "Grain Monopoly" followed, and became an autonomous government agency in 1936.

The Grain Monopoly also exercises control over the exports of corn, sunflower, rape- and cottonseed products, hemp, and flax. The Agricultural and Cooperative Bank exercises similar control for tobacco and rose-oil. In addition a law has been in effect since 1935 regulating the quality of export products. These measures are closely integrated with a rigid control of foreign exchange and imports.

TABLE 33.—Bulgarian exports of agricultural products, averages 1928-1932, 1935-1939; annual 1933 to 1939

| COMMODITY                     | AVERAGES  |           | 1933     | 1934     | 1935     | 1936     | 1937     | 1938     | 1939     |
|-------------------------------|-----------|-----------|----------|----------|----------|----------|----------|----------|----------|
|                               | 1928-1932 | 1935-1939 |          |          |          |          |          |          |          |
|                               | 1,000     | 1,000     | 1,000    | 1,000    | 1,000    | 1,000    | 1,000    | 1,000    | 1,000    |
|                               | bushe ls  | bushe ls  | bushe ls | bushe ls | bushe ls | bushe ls | bushe ls | bushe ls | bushe ls |
| Wheat .....                   | 3,656     | 4,730     | 3,799    | 1,359    | 1,293    | 4,677    | 7,227    | 4,020    | 6,434    |
| Rye .....                     | 1,082     | 190       | 51       | 12       | 78       | 465      | 248      | 161      |          |
| Barley .....                  | 1,400     | 376       | 794      | 528      | 92       | 726      | 1,043    | 23       |          |
| Oats .....                    | 14        | 47        |          |          |          | 21       | 213      |          |          |
| Corn .....                    | 4,889     | 2,110     | 3,952    | 4,956    | 205      | 4,094    | 3,886    | 2,307    | 59       |
|                               | 1,000     | 1,000     | 1,000    | 1,000    | 1,000    | 1,000    | 1,000    | 1,000    | 1,000    |
|                               | tons      | tons      | tons     | tons     | tons     | tons     | tons     | tons     | tons     |
| Bran .....                    |           | 26.2      | 26.1     | 23.8     | 11.1     | 38.5     | 58.6     | 8.5      | 14.1     |
| Beans, dry .....              | 16.2      | 15.6      | 36.5     | 18.3     | 21.5     | 27.3     | 24.5     | 4.7      |          |
| Rapeseed .....                | 14.6      | 6.0       | .6       | 2.5      | 17.0     | 1.0      | 2.9      | 2.6      | 6.7      |
| Soybeans .....                | 0         | 7.3       | .1       | .4       | 8.1      | 5.7      | 11.2     | 4.8      |          |
| Cottonseed .....              | 1.1       | 2.2       | 1.6      | 0        | 2.0      | 1.8      | 7.2      | 0        | 0        |
| Sunflower seed ..             | 20.0      | 37.4      | 11.9     | 13.2     | 52.9     | 51.2     | 47.7     | 10.9     | 24.6     |
| Oilcake .....                 |           | 42.7      | 27.9     | 32.0     | 31.4     | 54.5     | 50.3     | 42.7     | 34.7     |
| Tobacco .....                 | 24.6      | 30.2      | 25.2     | 23.3     | 27.2     | 22.4     | 24.8     | 37.6     | 39.0     |
| Grapes .....                  | 3.5       | 45.1      | 11.8     | 21.6     | 38.1     | 26.0     | 40.3     | 64.1     | 57.0     |
| Prunes .....                  | 2.1       | 8.8       | .8       | 4.6      | 10.8     | 6.1      | 4.0      | 12.1     | 10.9     |
| Apples .....                  | 01        | 7.2       | .3       | .1       | 5.5      | 5.2      | .3       | 8.3      | 16.8     |
| Meat products <sup>2</sup> .. | 2.1       | 6.9       | 2.0      | 3.1      | 5.1      | 8.7      | 8.3      | 8.5      | 4.0      |
| Eggs .....                    | 18.5      | 17.1      | 17.3     | 16.0     | 14.1     | 19.3     | 19.3     | 16.7     | 16.3     |
| Cheese .....                  | 1.3       | 1.6       | 1.3      | 1.3      | 2.1      | 2.0      | 1.5      | 1.8      | .7       |
|                               | Thou-     | Thou-     | Thou-    | Thou-    | Thou-    | Thou-    | Thou-    | Thou-    | Thou-    |
|                               | sands     | sands     | sands    | sands    | sands    | sands    | sands    | sands    | sands    |
| Cattle .....                  | 12.2      | 8.5       | 5.0      | 12.1     | 12.1     | 8.1      | 12.6     | 6.7      | 3.2      |
| Hogs .....                    | 1.9       | 21.9      | .4       | 1.8      | 1.1      | 12.8     | 29.4     | 43.1     | 23.3     |
| Poultry .....                 | 898       | 687       | 1,090    | 1,040    | 1,172    | 293      | 799      | 883      | 287      |
|                               |           |           |          |          |          |          |          |          |          |

<sup>1</sup> 1935-1938 average.

<sup>2</sup> Including dressed poultry.

International Yearbook of Agricultural Statistics; Statistique du commerce exterieur (annual).

## TOTAL BULGARIAN EXPORTS BY COUNTRY OF DESTINATION

Largely as a result of the changes in composition of farm exports, the direction of Bulgarian foreign trade has experienced marked shifts. Before the World War Bulgaria was indebted to Western Europe, particularly to Great Britain, France, and Belgium. Consequently, it exported most of its grain surpluses to those countries for debt service and for textile and machinery imports.

TABLE 34 *Total exports by country of destination, 1939 with comparisons*  
[Expressed as percentages of value of total exports]

| COUNTRY               | 1911 | 1929 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 | AVERAGE |      |
|-----------------------|------|------|------|------|------|------|------|------|------|---------|------|
|                       |      |      |      |      |      |      |      |      |      | 1935    | 1939 |
| Germany .....         | 12.4 | 29.9 | 36.0 | 42.7 | 48.0 | 47.6 | 43.1 | 58.9 | 67.8 | 55.4    |      |
| Austria .....         | 5.7  | 12.6 | 9.7  | 5.3  | 4.6  | 3.0  | 4.0  |      |      |         |      |
| Czechoslovakia ....   |      | 4.8  | 3.5  | 3.6  | 6.9  | 3.3  | 5.6  | 4.6  | 3.3  | 4.7     |      |
| Greater Germany ..    | 18.1 | 47.3 | 49.2 | 51.6 | 59.5 | 53.9 | 52.7 | 63.5 | 71.1 | 60.1    |      |
| Italy .....           | 2.1  | 10.5 | 9.1  | 9.2  | 8.8  | 3.6  | 4.2  | 7.6  | 6.1  | 6.1     |      |
| Great Britain .....   | 13.1 | 1.6  | 1.7  | 2.1  | 4.4  | 11.6 | 13.8 | 4.8  | 3.1  | 7.5     |      |
| France .....          | 6.0  | 5.1  | 3.3  | 2.1  | 1.8  | 2.1  | 1.6  | 1.5  | 0.9  | 1.6     |      |
| Netherlands, Belgium, |      |      |      |      |      |      |      |      |      |         |      |
| Denmark, Norway ..    | 30.4 | 6.1  | 13.3 | 8.9  | 4.4  | 9.2  | 6.3  | 4.4  | 2.8  | 5.4     |      |
| Poland .....          |      | 8.5  | 1.7  | 1.6  | 2.1  | 3.7  | 4.7  | 5.7  | 3.8  | 4.0     |      |
| United States .....   | 0.6  | 1.7  | 1.1  | 0.7  | 1.0  | 2.6  | 3.8  | 3.4  | 3.4  | 2.8     |      |

*Weltwirtschaftliches Archiv*, March 1940; *Statistique du Commerce extérieur*, Sofia (annual)

The predominance of tobacco surpluses, which replaced former grain exports, eventually led to an increase in the share of the Bulgarian exports taken by Central Europe, from 20 percent before the World War to 60 percent in 1925, and to more than 70 percent in 1929. On the other hand, the Western European countries, which had purchased 50 percent of total Bulgarian exports before the World War, reduced their purchases to 14.6 percent of the total in 1925 and to 12.7 percent in 1929.

Germany was the principal market throughout the post-war period, whereas before the World War it took much less than Belgium and also less than Great Britain and Turkey. By 1933 Germany's share had increased to 36 percent of total Bulgarian exports. The annexation of Austria resulted in even more pronounced Bulgarian dependence on the German market. The combined purchases of Germany and Austria rose to 58.9 percent of Bulgaria's total exports in 1938 and to 67.8 percent in 1939.

The German trade drive into Southeastern Europe is partly responsible for the increased Bulgarian interest in industrial crops. In foreign trade policy, however, Bulgaria endeavored at the same time to expand exports to the free-currency countries. Actually exports to free-currency countries (Great Britain, the United States, the Scandinavian countries, Egypt, and Palestine) increased from 4.8 percent in 1927-1929



to 10.9 percent in 1933-1935, and to 25.4 percent in 1937.<sup>47</sup> In 1938 and 1939, however, the share of these countries fell to 13.1 and 10.3 percent, largely because of the decline in exports to Great Britain. At the same time Bulgarian exports to countries (other than Germany) with clearing agreements fell from 59.2 percent in 1930-1932 to 41.3 percent in 1933-1935, and to 14.3 percent in 1939.

Germany now virtually dominates the foreign trade of Bulgaria. Greater Germany takes 71 percent of the total exports. Italy, which ranks second, takes less than one-tenth as much as Germany. Great Britain's share of the exports was reduced to 3.1 percent in 1939. It is doubtful whether Britain's former purchases can be diverted to the Axis powers, because the Soviet Union, following the conclusion of a trade treaty in January 1940, has become a new outlet for such Bulgarian farm products as tobacco, hogs, rose-oil, and hides, in exchange for Russian oil, metals, machinery, and cotton.

#### GEOGRAPHIC DISTRIBUTION OF FARM EXPORTS

Since farm products comprise over 90 percent of the total Bulgarian exports, and since Germany and former Austria took more than two-thirds of the total in 1939, it is evident that only about one-third of the Bulgarian farm surplus has been available to other countries.

The greater part of Bulgaria's grain surpluses had to be sold to the free-exchange countries during 1935-1939, largely in order to obtain urgently needed foreign exchange for imports that could not be furnished by Germany. Great Britain was the principal market for wheat and corn, although about 10 percent of the exports of each went to Scandinavia and the Low Countries. Italy took about one-fifth of the wheat surplus. Germany did not enter the Bulgarian wheat market until 1937.

The greater part of any grain surpluses available during the present war probably will be absorbed by Germany, since exports to Great Britain will not be possible. Except for dry beans, sunflower seed, oilcake, and live cattle, by far the largest share of the exports has been sent to Germany, which contracted for the entire surplus of soybeans. In addition Germany has been importing about nine-tenths of the total Bulgarian exports of fruits, two-thirds of the tobacco, egg, and meat products exports, and about half the exports of hogs and poultry.

Scandinavia and the Low Countries took about one-third of the sunflower seed and nearly two-thirds of the oilcake exports. Italy was an important market for poultry and dry beans. Switzerland took about 15 percent of the exports of eggs. It is difficult to appraise the future role of Russia. The Russo-Bulgarian trade agreement provides for the delivery of various Bulgarian farm products in exchange for Russian mineral oil, machinery, and fibers. It is believed, however, that Germany's share will at least be maintained.

<sup>47</sup> Pomenow, K., "Exports of agricultural products from Bulgaria." *Monthly Bulletin of Agricultural Economics and Sociology*, Feb. 1940, p. 64; also Deyanowa, Milka. *op. cit.*, p. 436

## POTENTIAL FARM SURPLUSES DURING AND AFTER 1940-41

Shortly after the outbreak of the present war the Bulgarian Government took steps to safeguard domestic stocks of foodstuffs and raw materials. On August 29, 1939, the exportation of cotton, flax, hemp, feedstuffs and hides was prohibited. A few days later exports of live animals, meat products (except bacon), cheese, butter and other animal fats, potatoes, and sugar were prohibited. Subsequently, however, the exportation of hogs and lard was again permitted.

## THE 1940-41 OUTLOOK

According to recent information, it is believed that the 1940 acreage of the principal crops (tobacco, grains, oilseeds, and fruits) will be slightly above that of 1939, however, a delayed spring and heavy rains retarded growth by about a month and caused some damage to winter and early spring plantings.

Late spring plantings, particularly of tobacco, apparently were not greatly affected by adverse weather conditions. The tobacco crop is expected to exceed that of 1939. The 1940 wheat crop is estimated at about 70 million bushels, or about the same as that for 1939. It is not believed that any wheat export surplus will be available during the 1940-41 marketing season. The annual exports of wheat averaged 6.4 million bushels during 1935-1939. Prospects for corn and minor grain crops have been reported as promising in both quality and quantity. Corn exports, however, will hardly exceed 5 million bushels in 1940-41. The average for 1935-1939 was 2 million bushels.

The 1940 crop of sunflower seed and other oilseeds is estimated at about the same as the 1939 production. The extent of available export surpluses, however, will depend largely on government policy. The general quality of the 1940 fruit crops was poor, and fruit exports will be reduced from the 1939 level. The plum crop was small, and the grape crop was well below that of 1939.

## THE OUTLOOK AFTER 1940-41

In all probability the Bulgarian Government will continue its efforts to promote the expansion of industrial crops. Increasing export surpluses of oilseeds and probably a further rise in fruit exports may be expected in years of normal yield. There is little likelihood, however, of an increase in exports of live animals and animal products during the next few years since the volume of domestic feedstuffs supplies cannot readily be expanded.

According to the latest information, a 4-year agricultural plan is under consideration. Its main features are a large-scale irrigation program, an increase in supplies of farm implements, and a more extensive use of commercial fertilizers. However, large-scale delivery of farm equipment and commercial fertilizers does not appear possible for the duration of the war.